



DreamBox 500 for Newbies 6.1

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Guide for the Correct Setup of the DreamBox 500-S



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Introduction

Congratulations on your new DreamBox purchase. You have already shown good judgment just by making this selection. The DreamBox is not “Plug and Play” but it is not rocket science either. You should be familiar with simple Windows commands and be willing to become comfortable with Windows. This

Guide is designed to assist a beginner through all the steps necessary to watch TV as well as mentioning more advanced features.

Your new DreamBox will come preconfigured with an official image from DREAM Multimedia. This will work great for FTA (Free-To-Air channels) and with modification will allow viewing of encrypted channels. We do not encourage satellite piracy but provide information for educational purposes only. Most DreamBox owners use private images. This Guide will discuss the use of the **Nitro** image from North America but will also answer your general questions about other images. This image was designed to reduce pixellation and freezing by reducing the size of the image and by removing unnecessary portions of the image not needed in North America. Anything other than the basic image can be added as an **Addon**.

This image will work with both the Phillips and Alps tuners.

First, you will need to configure the DreamBox so you can communicate with it. A network is by far the recommended mode of communication with your DreamBox. A network isn't absolutely necessary since the DreamBox can be flashed via a Crossover LAN cable (not a standard Ethernet cable) but a network makes life much easier and is highly desirable. Much of the software used to program your DreamBox will require a network or a crossover cable. A crossover cable is only for those too cheap or lazy to setup a home network and connects directly from the DreamBox Ethernet port to your PC's Ethernet port.

Disclaimer: We do not encourage or condone the usage of the DreamBox for illegal satellite viewing. This guide is for educational use only and is not intended to assist in the theft of satellite signals.

This section of the Guide is an Overview of what needs to be done. More explanation of each step is found throughout the Guide and hyperlinks to those sections are embedded.

1. Download the latest **Nitro** image or image of your choice from our forum at <http://www.dreamboxfornewbies.net>.
2. Download the various programs necessary to program your DreamBox. These include **Universal DreamUp**, **DreamBox Control Center**, and **DreamBoxEdit**.
3. Start [Universal DreamUp](#) to flash your image.
4. Put a check in the **Use Network** box on DreamUp and use a null modem cable connected to your PC and a LAN cable connected to your router (or crossover LAN cable also to your PC). The network cable will speed up the transfer of files. You can also use just the null modem cable but be sure to uncheck the **Use Network** box.
5. Unplug the power. (DreamUp will tell you when to turn power on.) Follow the on screen directions.
6. Click **Flash Erase**.
7. Click **Flash** and browse to the **Nitro** image or to any image of your choice.
8. Unplug your DreamBox 500 power cord and the null modem cable.
9. Connect your DreamBox to your router via an Ethernet cable, to your satellite switch via an RG6 cable, and to your TV via your selected connection. (You can use the crossover LAN cable if you are too cheap or lazy to get a LAN going with a router.)
10. Plug in power cable.
11. The boot logo will be flickering on most TVs when the DreamBox is booting because it boots up in PAL mode instead of NTSC.
12. Nitro defaults to the North American Settings of NTSC, 4:3 Screen, and no AC3 (Dolby). You will select your language and your time zone at the beginning.
13. Choose **No DiSEqC**.
14. Press the **Menu** button and go to **Setup**.
15. Go to **System Settings** to make sure you have all your **A/V Settings** and **Time Settings** correct.
16. Configure [Communications](#) in **Expert Setup** and make sure that you have chosen NTSC and English so you can

use **DreamBox Control Center** and **DreamBoxEdit** as described later in this Guide.

17. [Load the most recent DBFN Nation Service List](#) (channel list) from our [forum](#). Anytime you scan transponders you erase information from the service list. Dish Network and Bell ExpressVu transponders cannot be scanned so don't try. If the desired satellites are in the service list on this forum use it. If you need to add non-Dish and non-BEV satellites, scan them in one at a time using **Automatic Transponder Scan**.
18. Setup [Satellite Configuration](#).
19. [Reload the DBNF Nation Service List](#).

This will get you the free-to-air channels. If you plan to test other channels (which we don't encourage or condone your doing) then you need to install an Emu and the correct keys. The key files are **SoftCam.Key** and **AutoRoll.Key** for **Radegast** or **Autoupdate**, **Keylist.txt**, and thirteen **nagra ROM** files for **Evocamd** or **keylist**, **rsakeylist**, **mappings**, and thirteen **nagra ROM** files for **Newcamd** or **SoftCam.Key** and **AutoRoll.Key** for **MGcamd**. These file names are case-sensitive! Most people in North America use **Evocamd**.

1. [Install your Emu](#).
2. [Activate your Emu](#).
3. [Install the keys](#). This step is unnecessary if the Emu Tarball (xxx.tar.gz) contains the keys.

Error Messages:

If the screen says **Service not Found** then you need to correct your setup of satellites in **Satellite Configuration**, FTP a new Service/Channel list to the DreamBox, replace your switches, and check your wiring and equipment.

If the screen is black without messages or it says **Cannot Descramble** then you have an Emu or Key problem and need to check where you FTP'ed the **key files**, check to see if you installed the Emu, and/or reboot. Make sure you CHMOD 755'ed any files you FTP'ed manually.

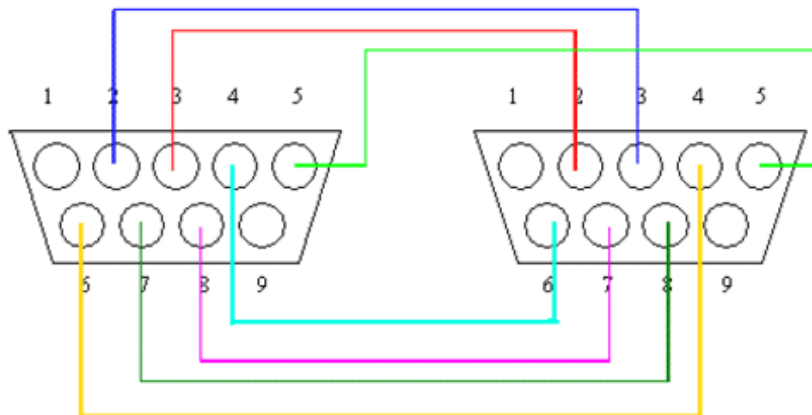
Section 2

Recommended Equipment and Software

Equipment:

1. Null modem cable (make your own if you want).

Null Modem DB9 cable : Dreambox Serial cable



The DB9 side showed here is the one you solder the wires

2. SCART adapter if you want component video or S-Video. The 500 comes with composite out RCA connectors.



Combination Component/S-Video SCART

3. LAN so you can connect to your Box from a PC and so you can get on the internet. You can use the crossover cable if you cannot get a LAN going.
4. A computer on the LAN with hard drive space available on which to set up an NFS or CIFS drive. This is only necessary if you plan to record TV or Radio. CIFS works much better than NFS on a 500.

Software:

1. Newest **DreamBox for Newbies** file from www.dreamboxfornewbies.org.
2. **DreamBoxEdit**.
3. **DreamBox Control Center**.
4. **Universal DreamUp**.
5. **FlashWizard**.
6. Most current **DBFN Service/Channel List** from the Channel List section of [DreamBox For Newbies Forum](#).
7. Private image of your choice. (This Guide is written specifically for the **Nitro** images but can be used with any image with minimal modifications.)

Section 3

Using Universal DreamUp

Purpose: **Universal DreamUp** is used to install images on your DreamBox and to fix a DreamBox that is frozen. When the situation seems hopeless, use **Universal DreamUp**.

DreamUp can now be used successfully with a Network Cable or without one. The Network Cable will speed up the process considerably. A **straight through LAN cable** can be connected to the router and the DreamBox or a **cross-over LAN cable** can be connected between the PC and the DreamBox. The **Null Modem Cable** is used in every method with DreamUp.

Two ways to use **DreamUp**:

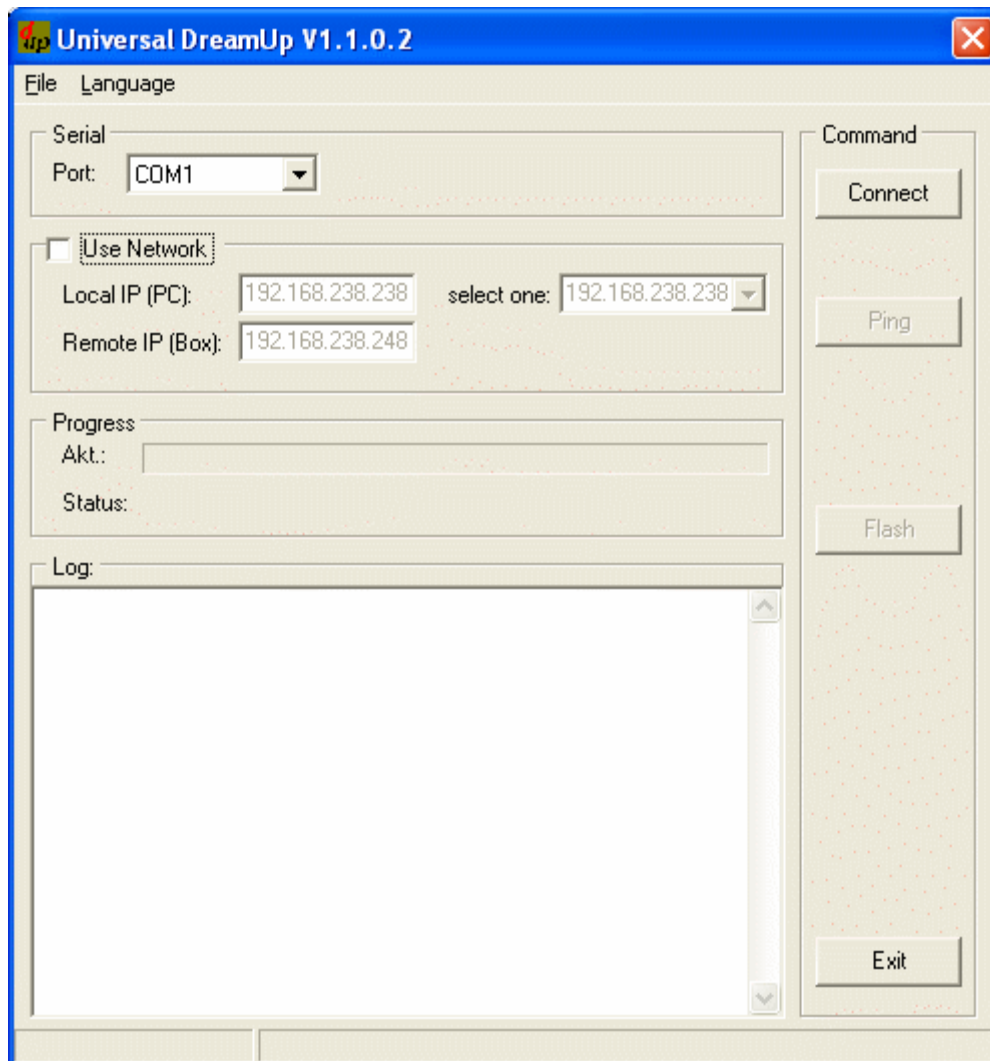
[Null modem cable only - Slow](#)

[Network cable and null modem cable – Fast](#)

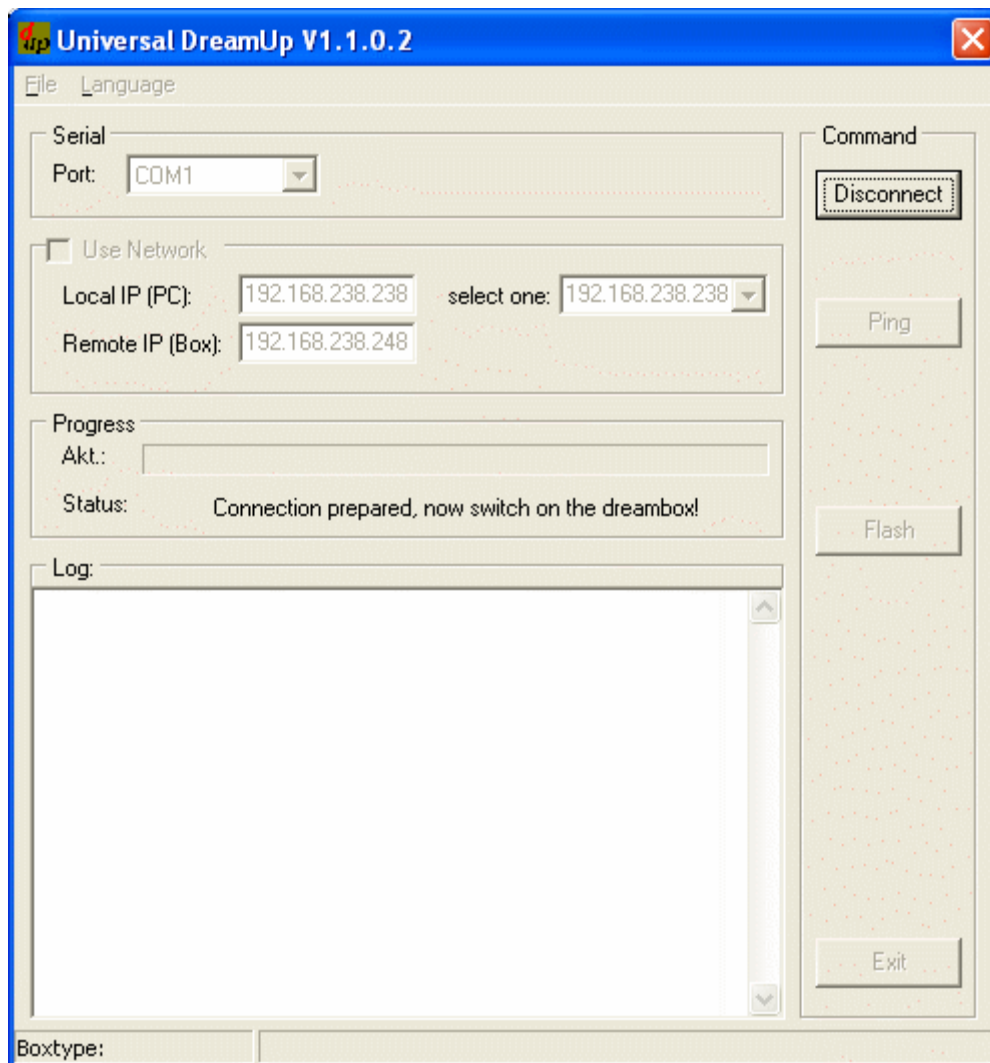
Don't Use Network – Slower Method:

1. Unplug the DreamBox from its power.
2. Connect a Null Modem Cable between the PC and the DreamBox. A plain serial cable WILL NOT work!

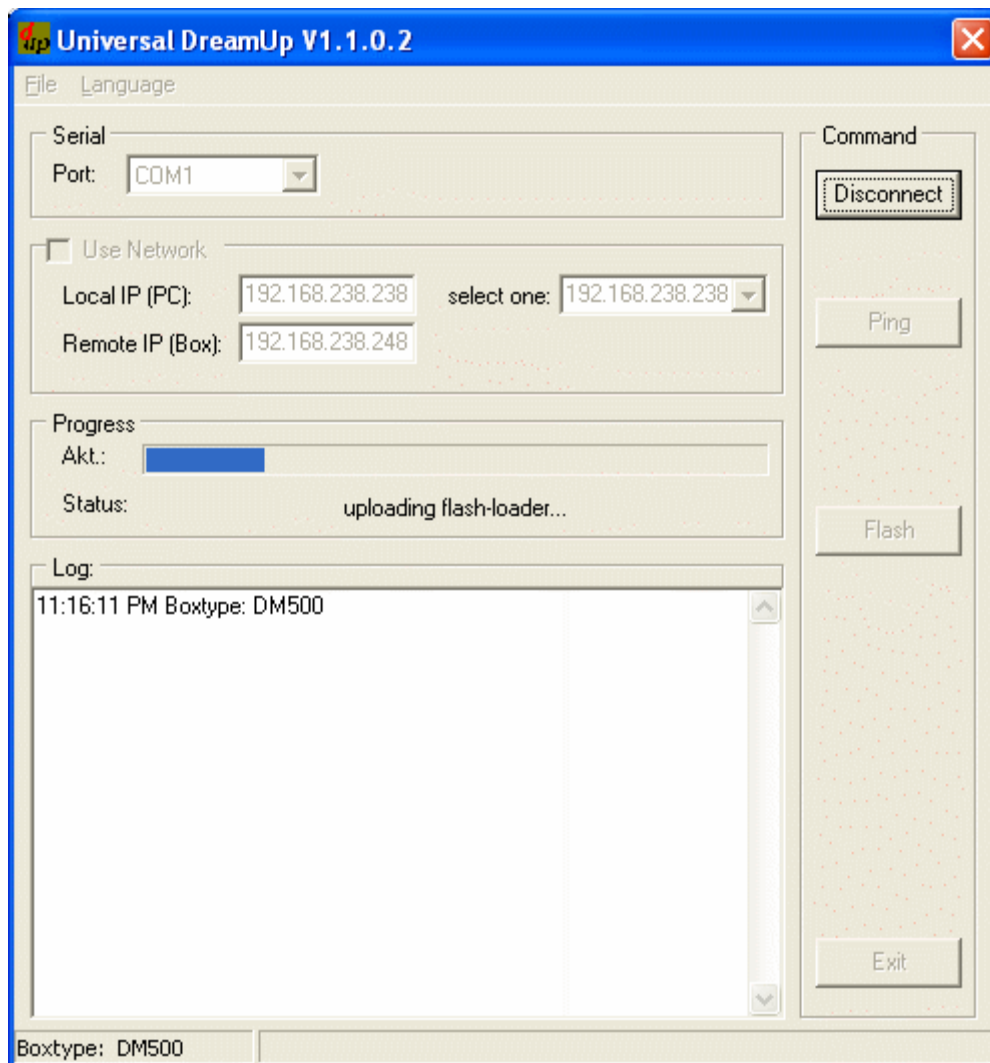
3. Start the **Universal DreamUp** program on your PC and you will see the following screen:

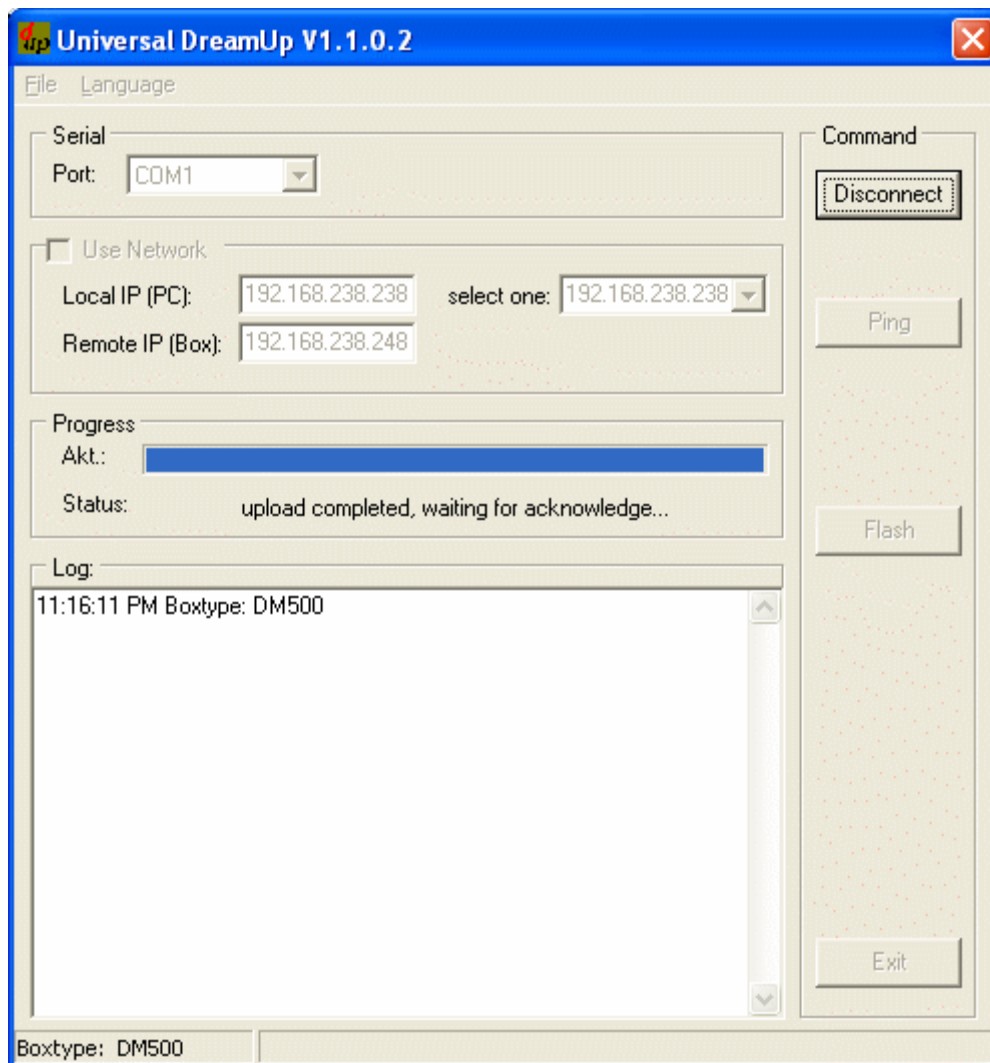


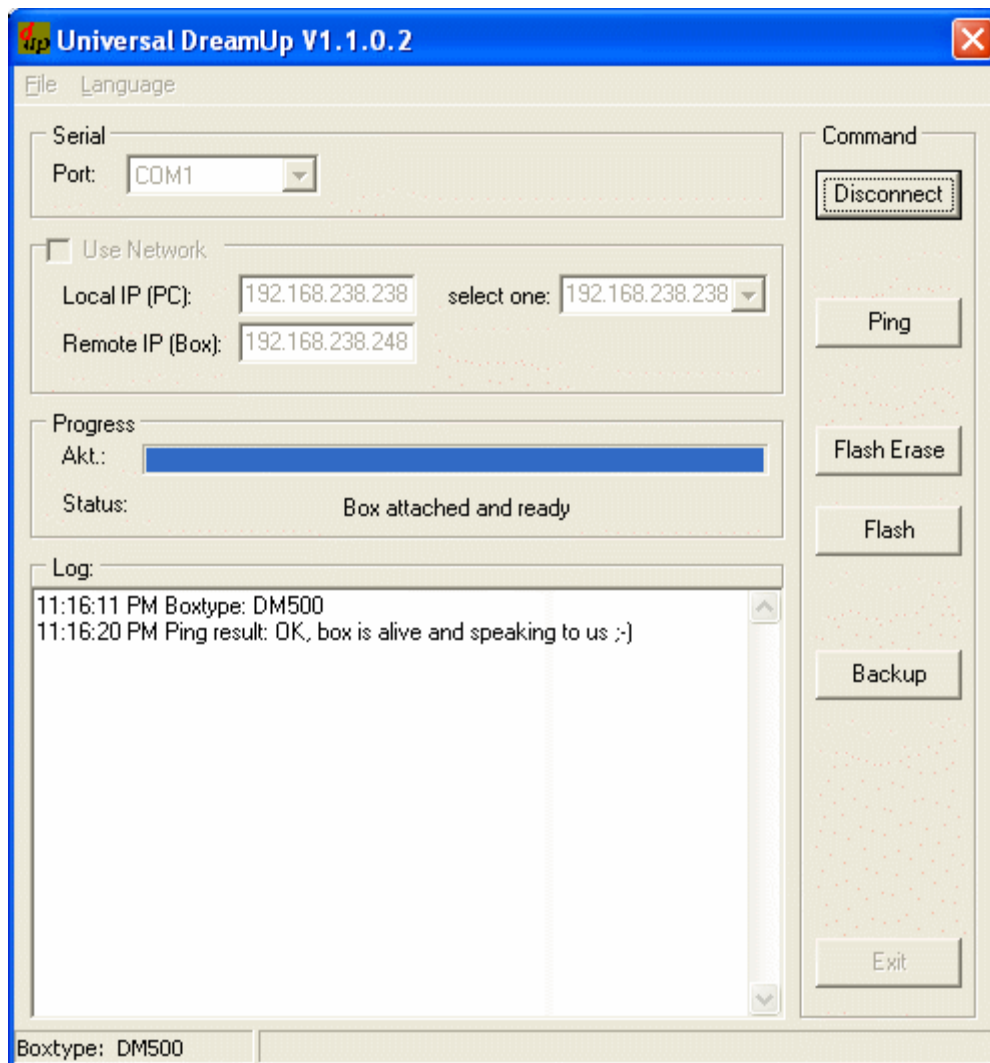
4. Leave the **Use Network** box unchecked.
5. Click **Connect**.



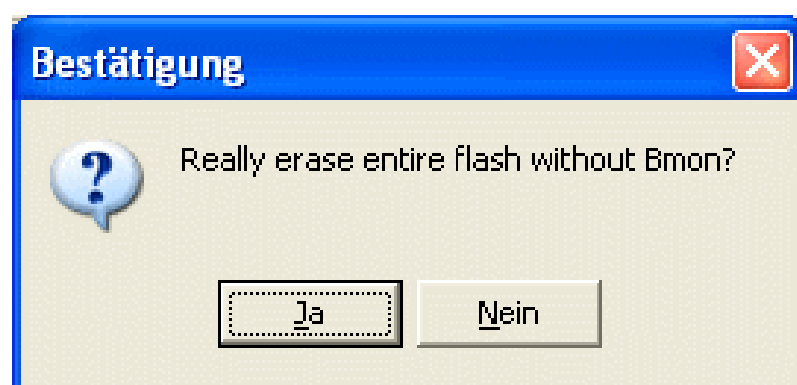
6. When it says to **switch on the dreambox** please plug in the **DreamBox**.
7. Eventually you will see these screens:



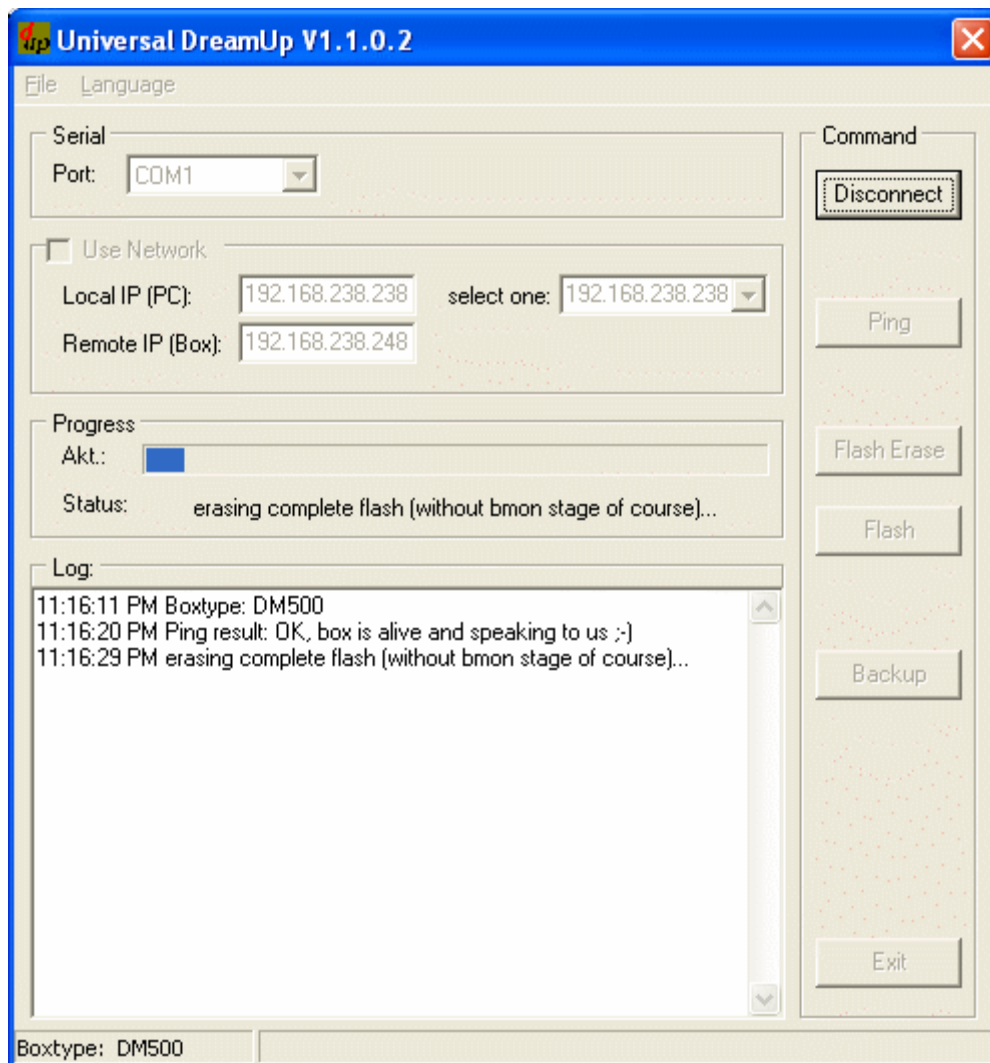




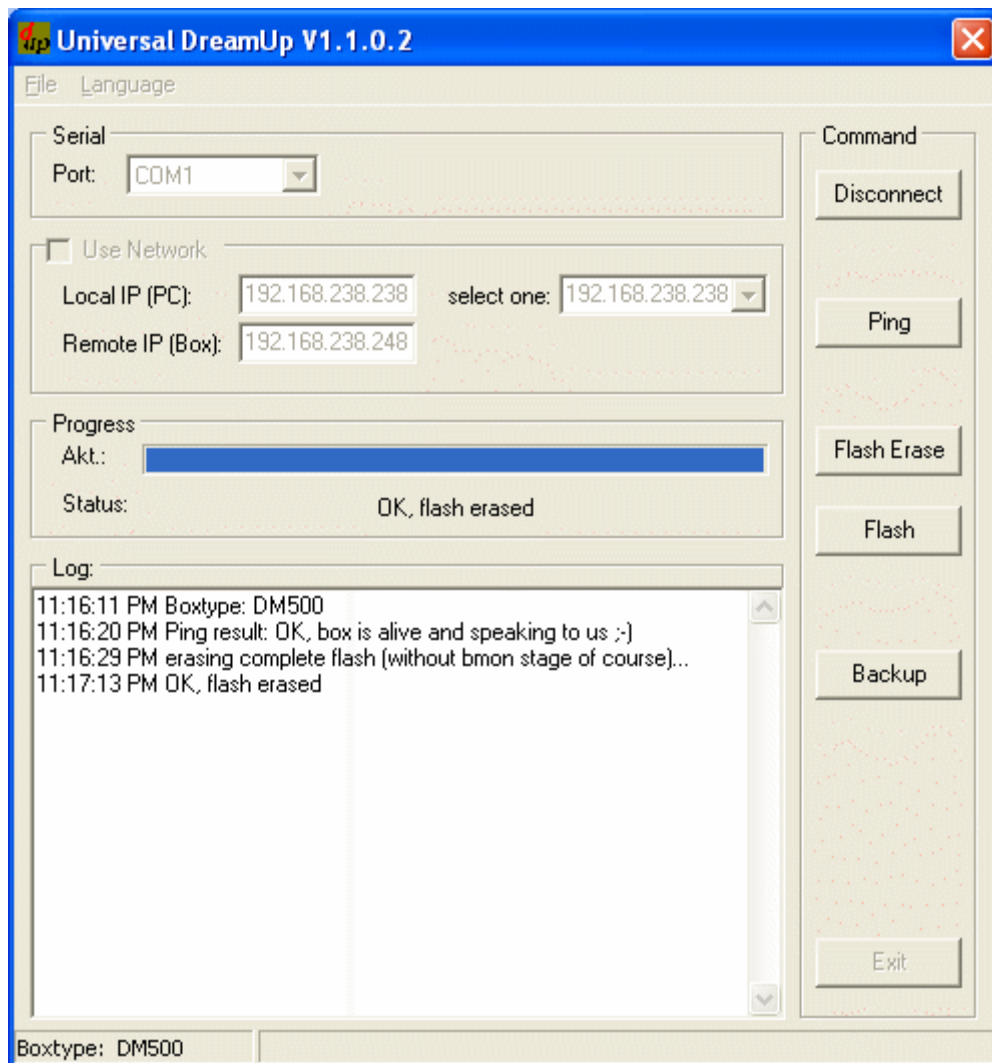
8. Click **Flash Erase** and you will see the following screen.



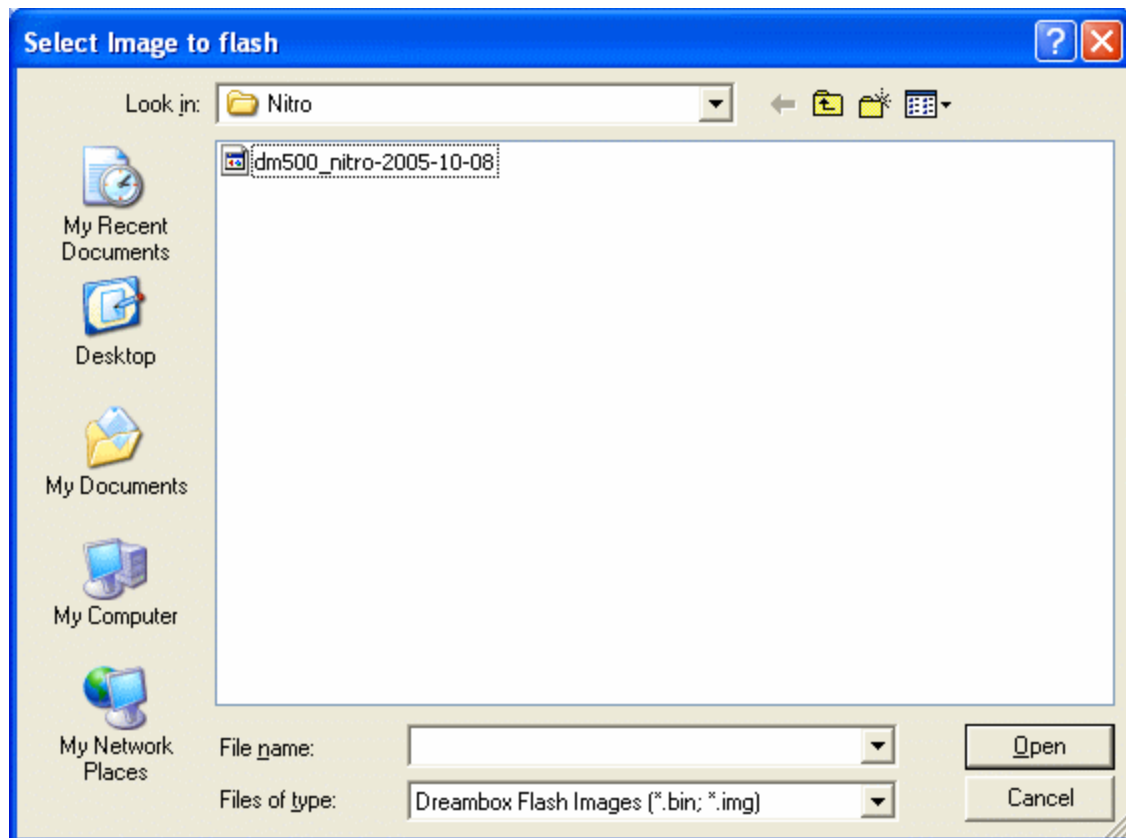
9. Select **Ja** (Yes) and you will see this screen:



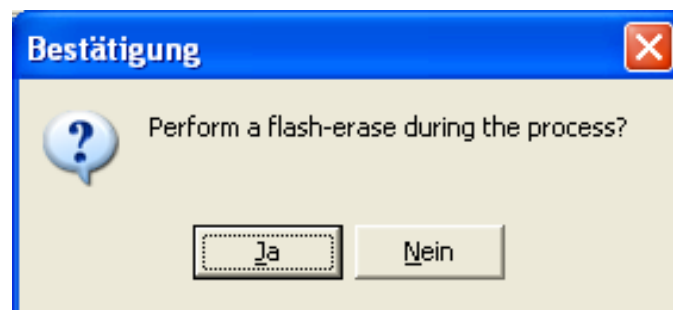
10. It will tell you when it is completed successfully.



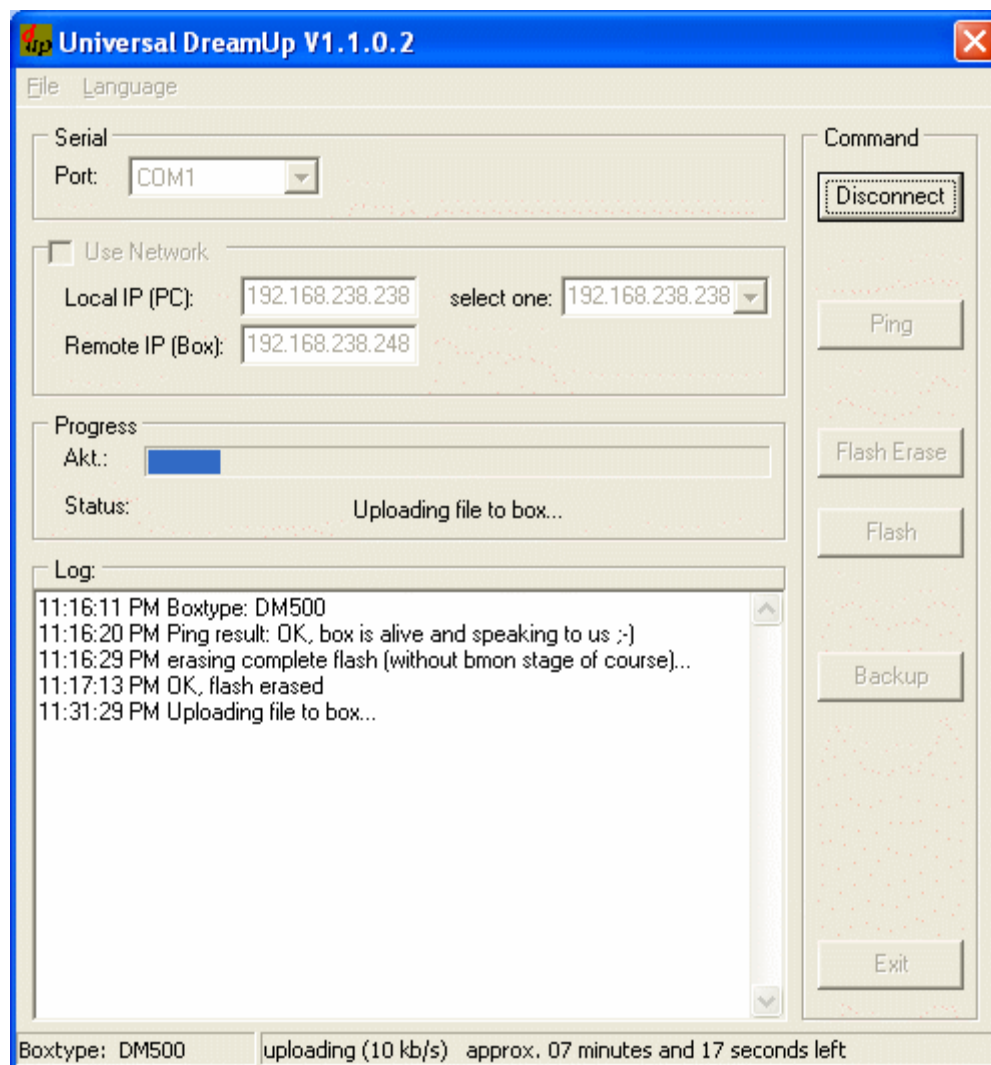
11. Click **Flash** and browse to the image of your choice, most likely **Nitro**, and select it.



12. Answer **Ja** to the flash erasing during the process.



13. The image will begin uploading to the **DreamBox 500**.

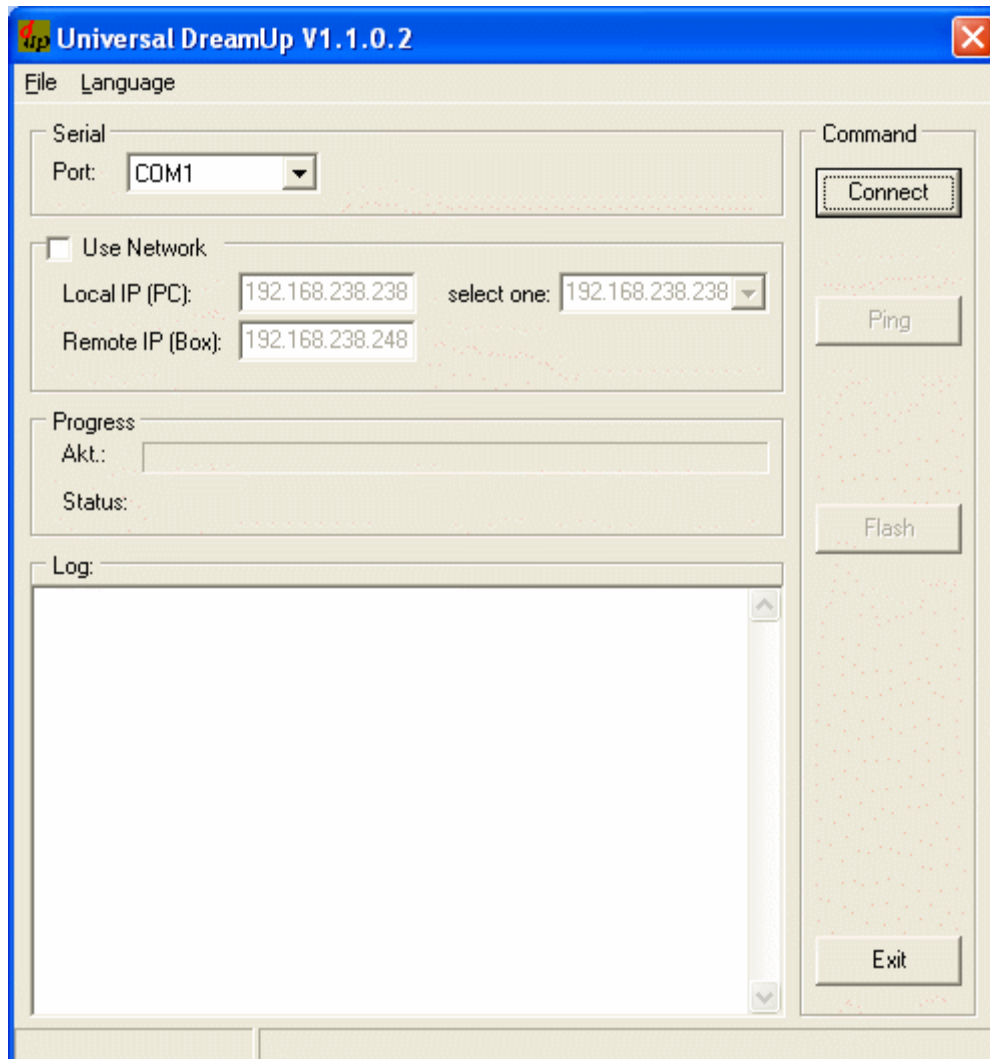


14. It will tell you when the process is over.

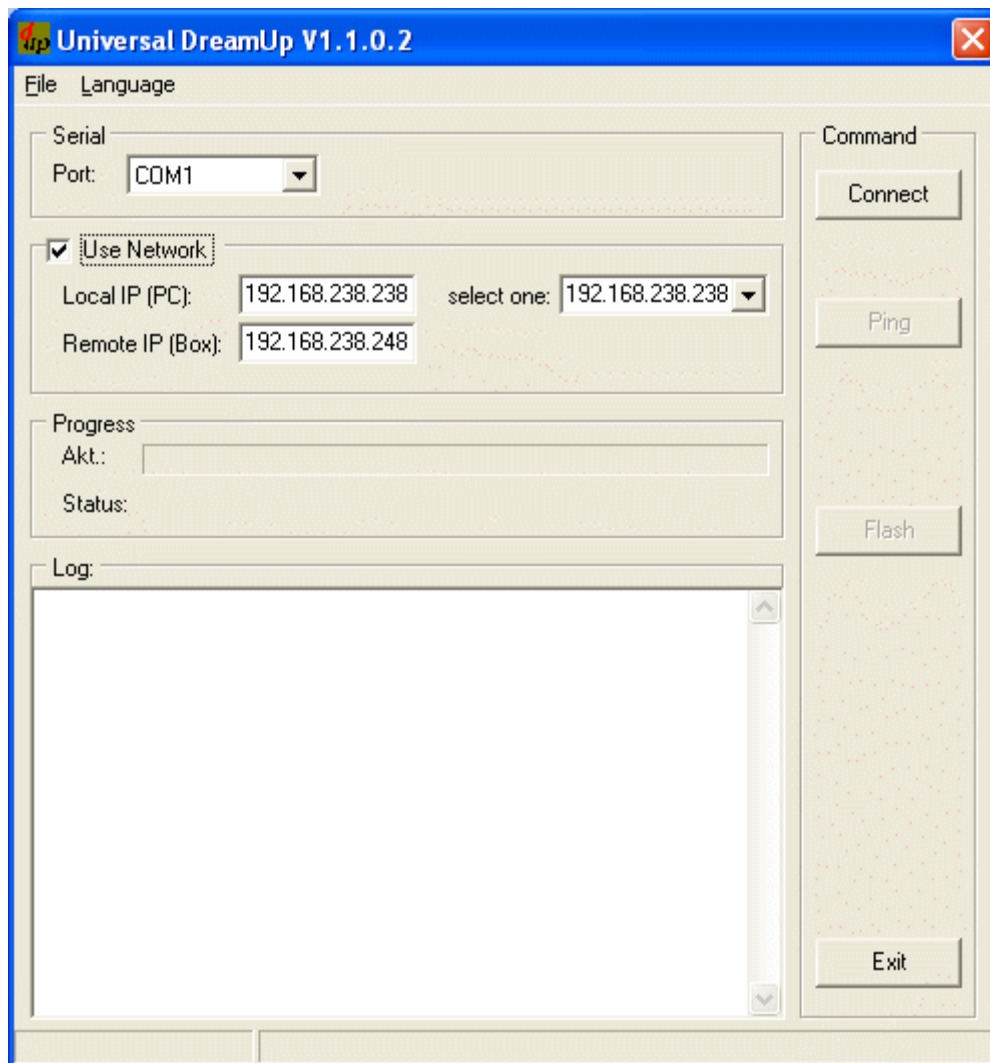


Use Network – Faster Method

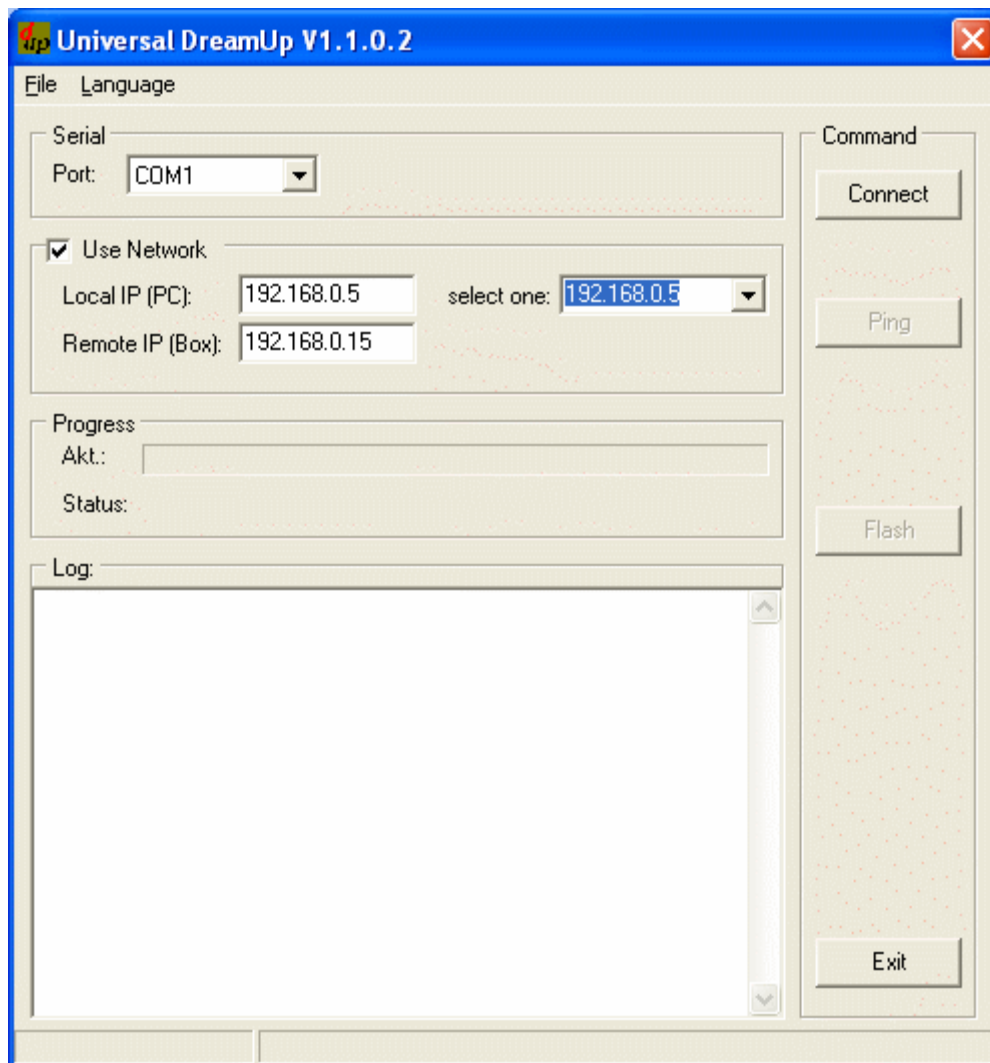
Unplug the DreamBox from its power.
Connect a Null Modem Cable between the PC and the DreamBox. A plain serial cable WILL NOT work! Also connect you Network cable.
Start the **Universal DreamUp** program on your PC and you will see the following screen:



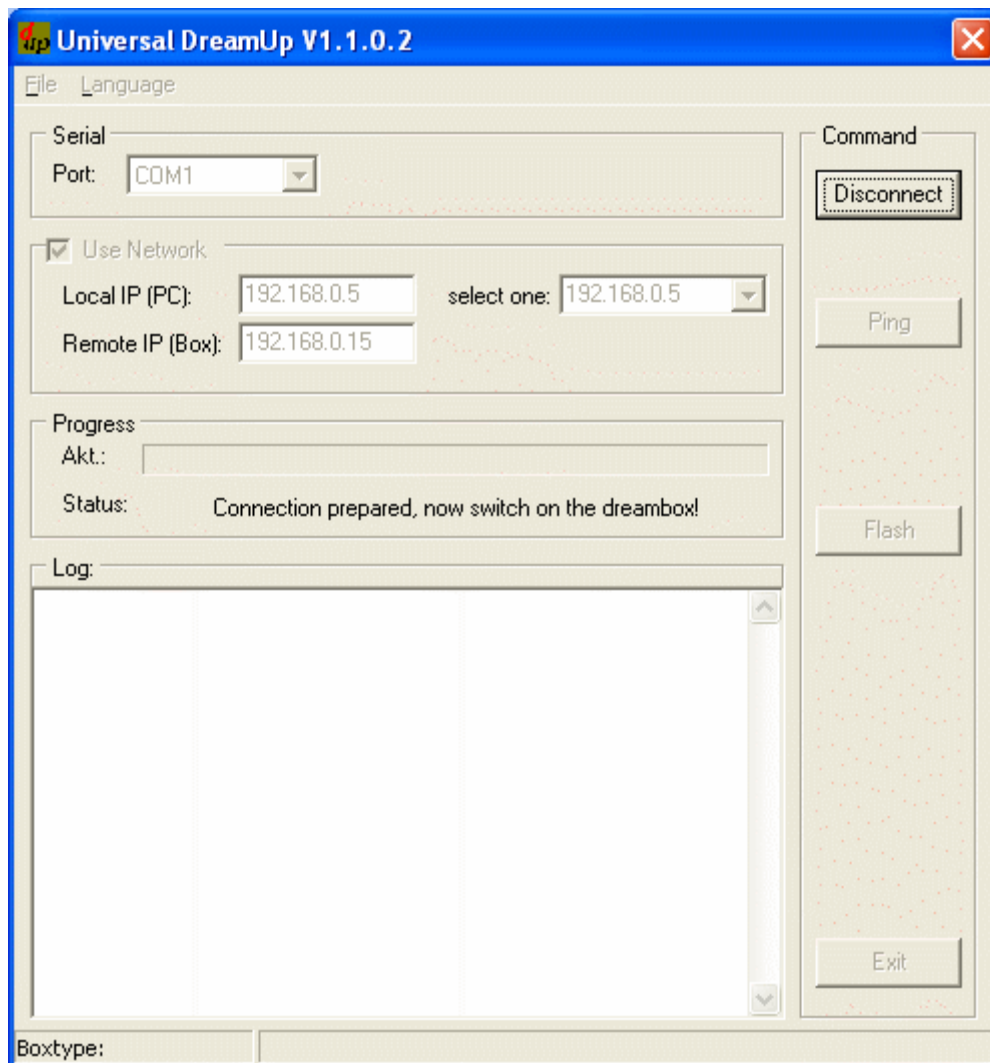
Check the **Use Network** box.



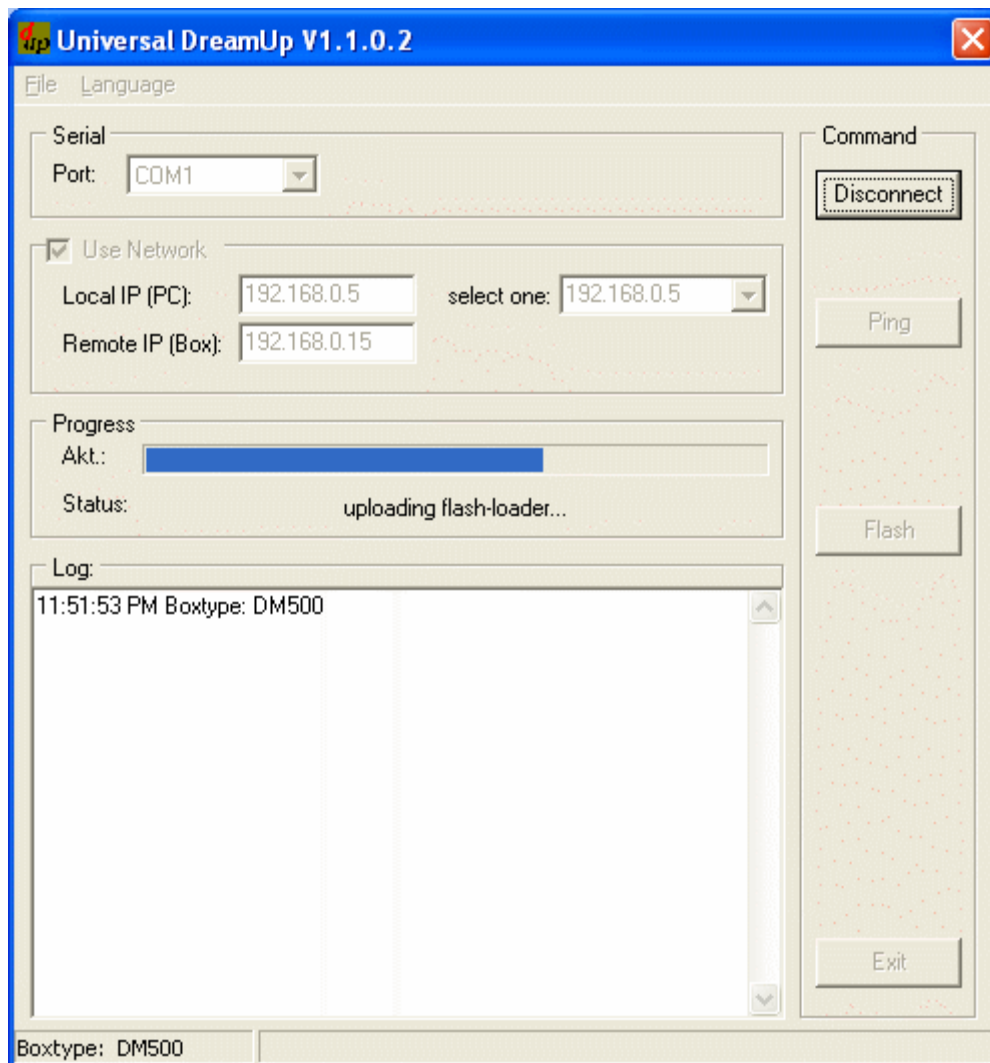
You will potentially see a drop down box giving you choices for the local IP. This is your PC IP and needs to be in the format of 192.168.0.xxx or 192.168.1.xxx or something similar. The 192.168.238.238 will not work in this example.

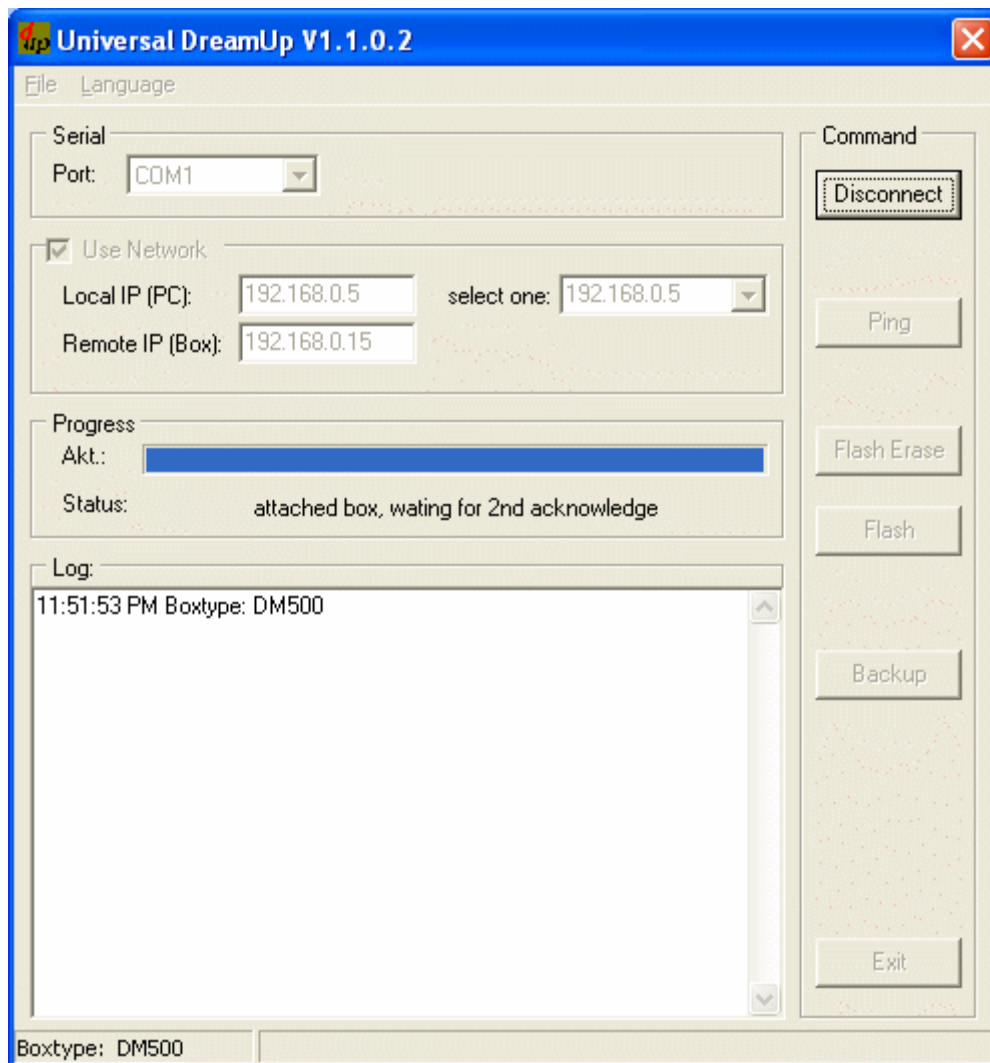


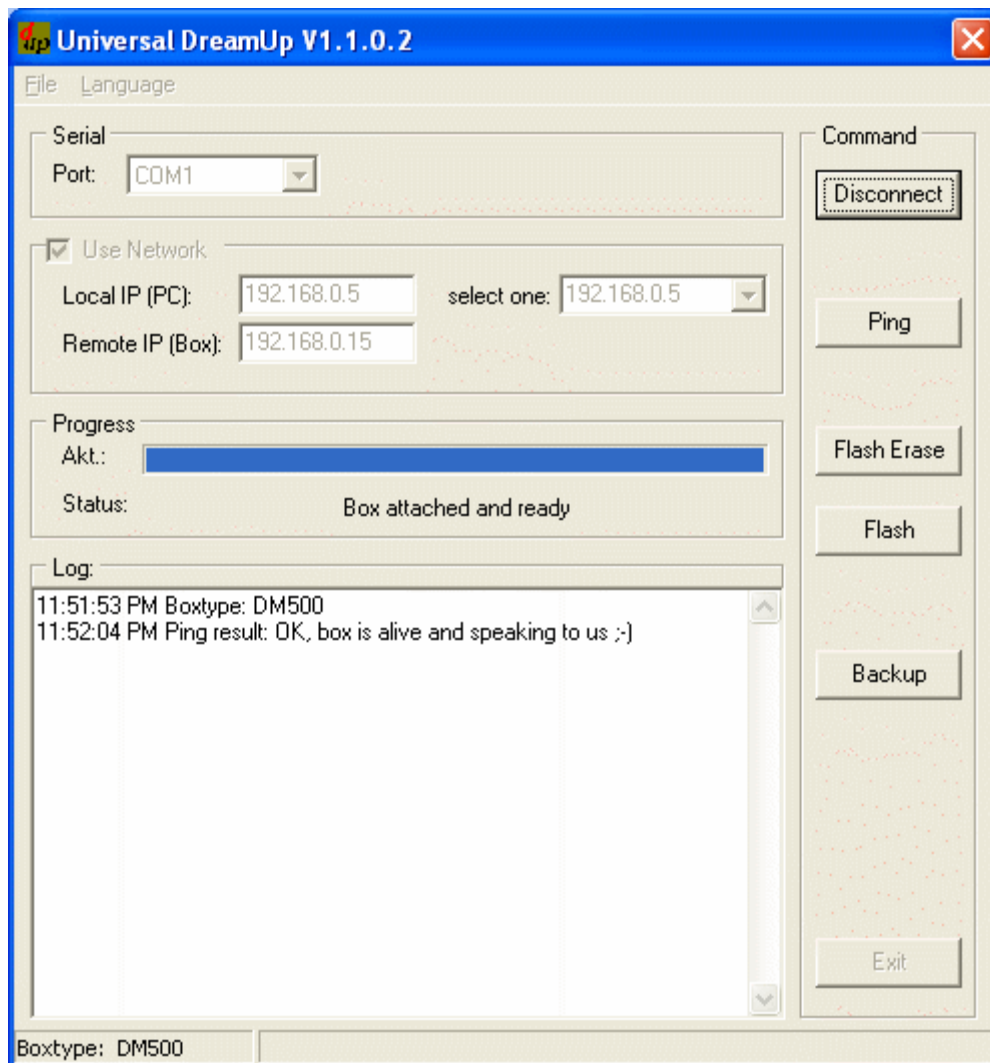
Click **Connect**.



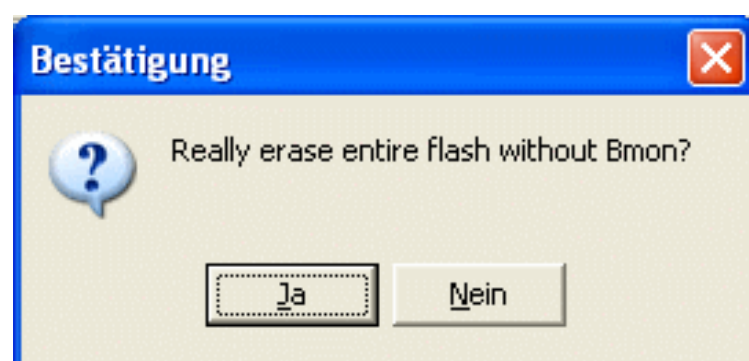
When it says to **switch on the dreambox** please plug in the **DreamBox**.
Eventually you will see these screens:



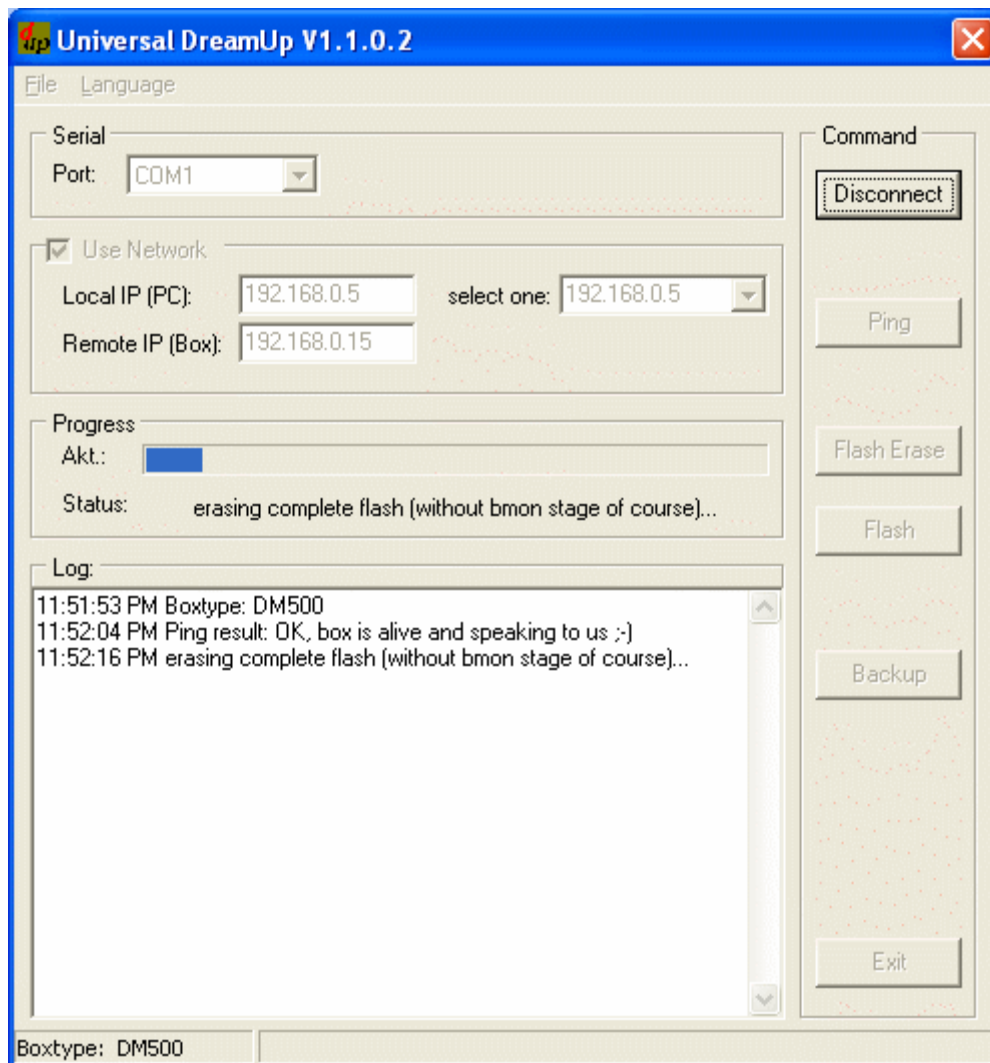


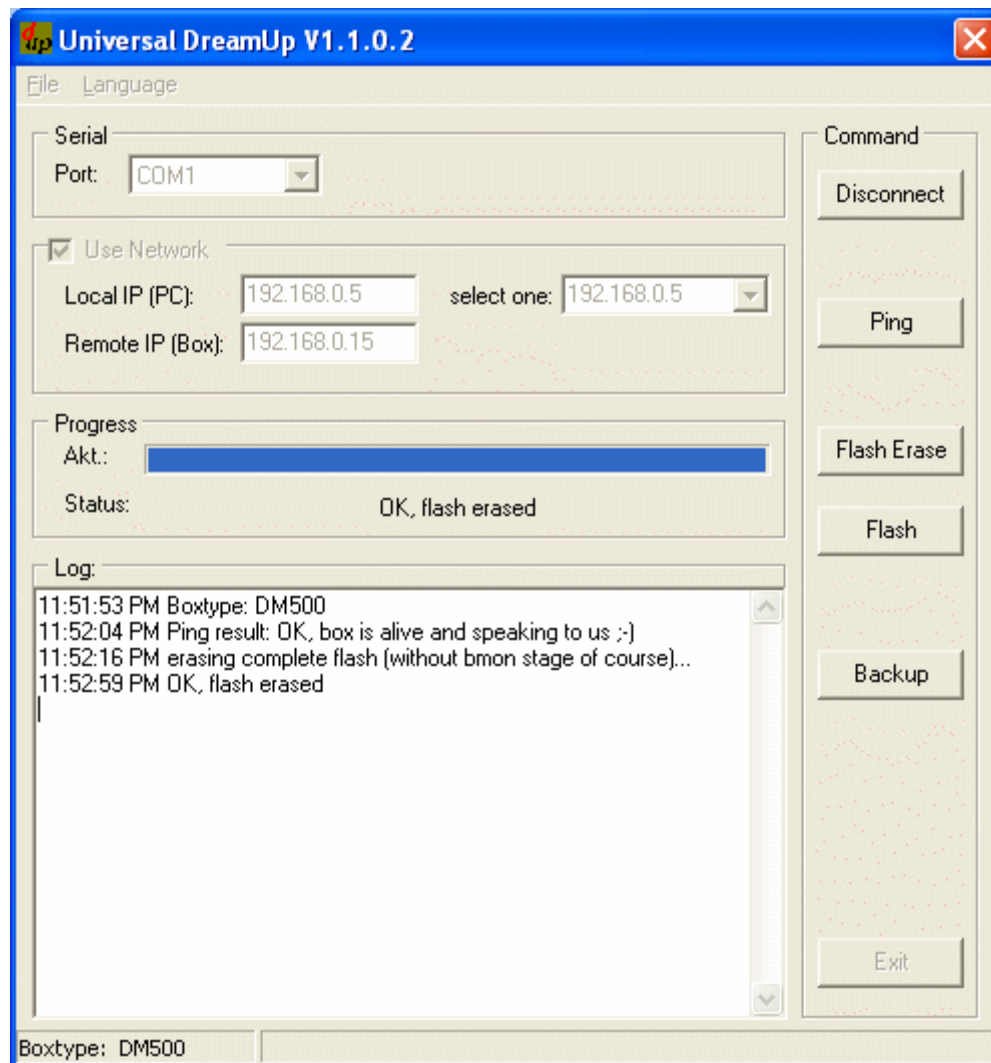


Click **Flash Erase** and select **Ja** (Yes).

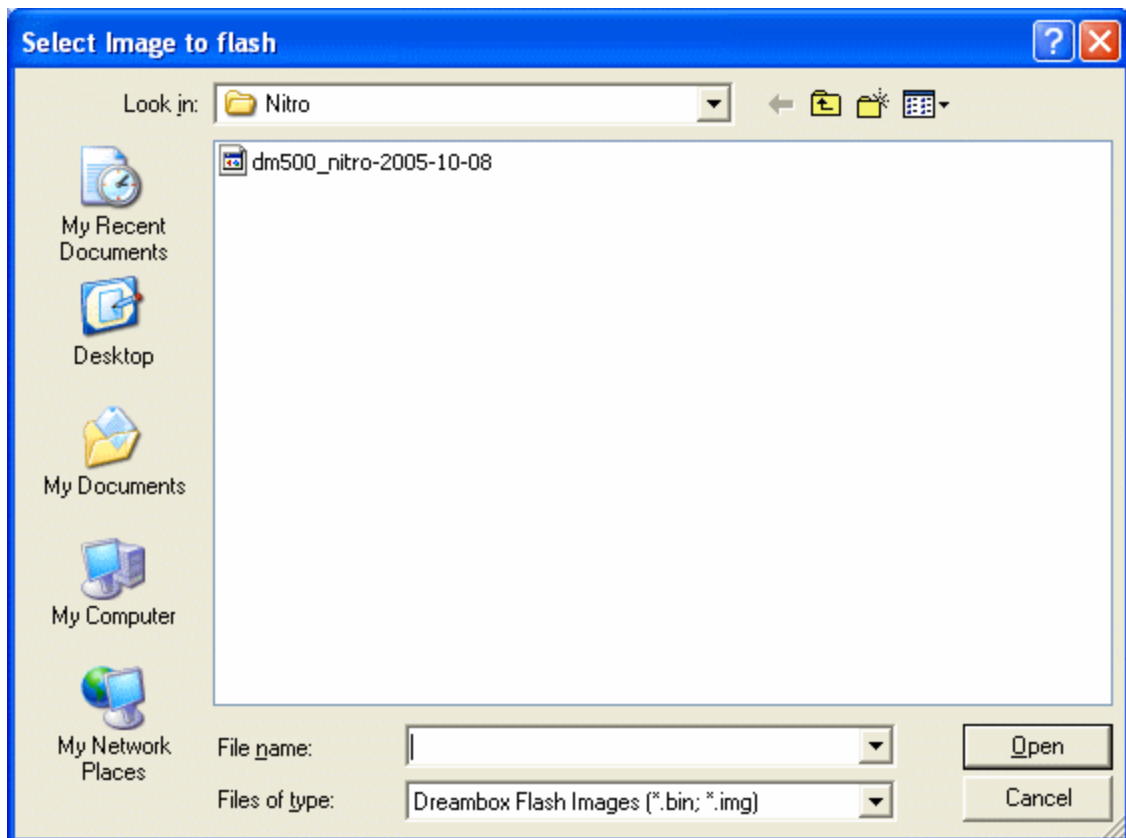


You will see the following screens showing you the flash erase is complete:

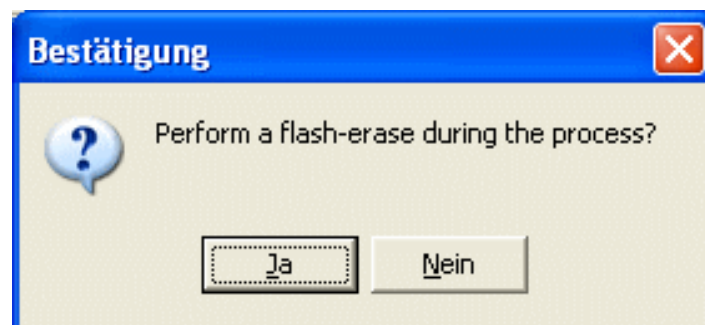




Click **Flash** and browse to the image of your choice, most likely **Nitro**, and select it.



Answer **Ja** to the flash erasing during the process.



The image will begin uploading to the **DreamBox 500** and then erase the flash and begin flashing the image.

Universal DreamUp V1.1.0.2

File Language

Serial
Port: COM1

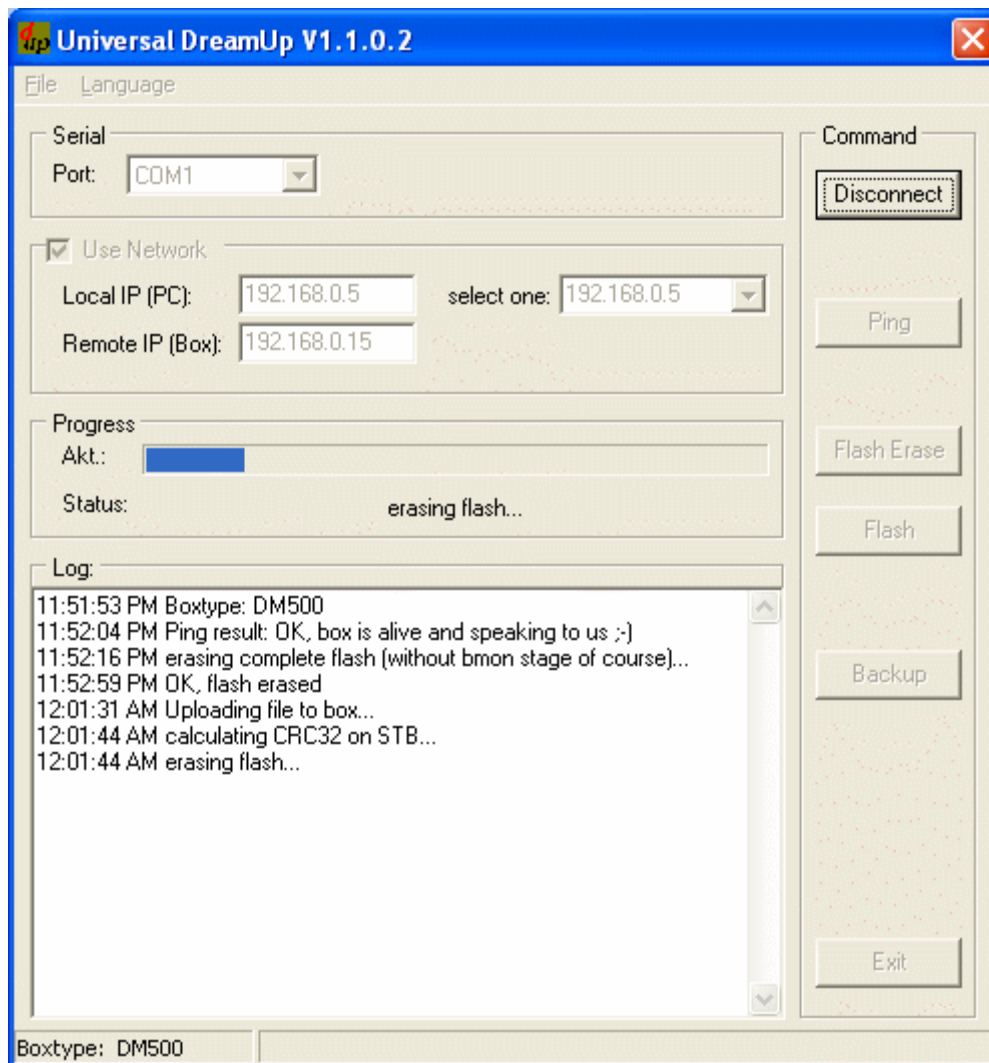
☒ Use Network
Local IP (PC): 192.168.0.5 select one: 192.168.0.5
Remote IP (Box): 192.168.0.15

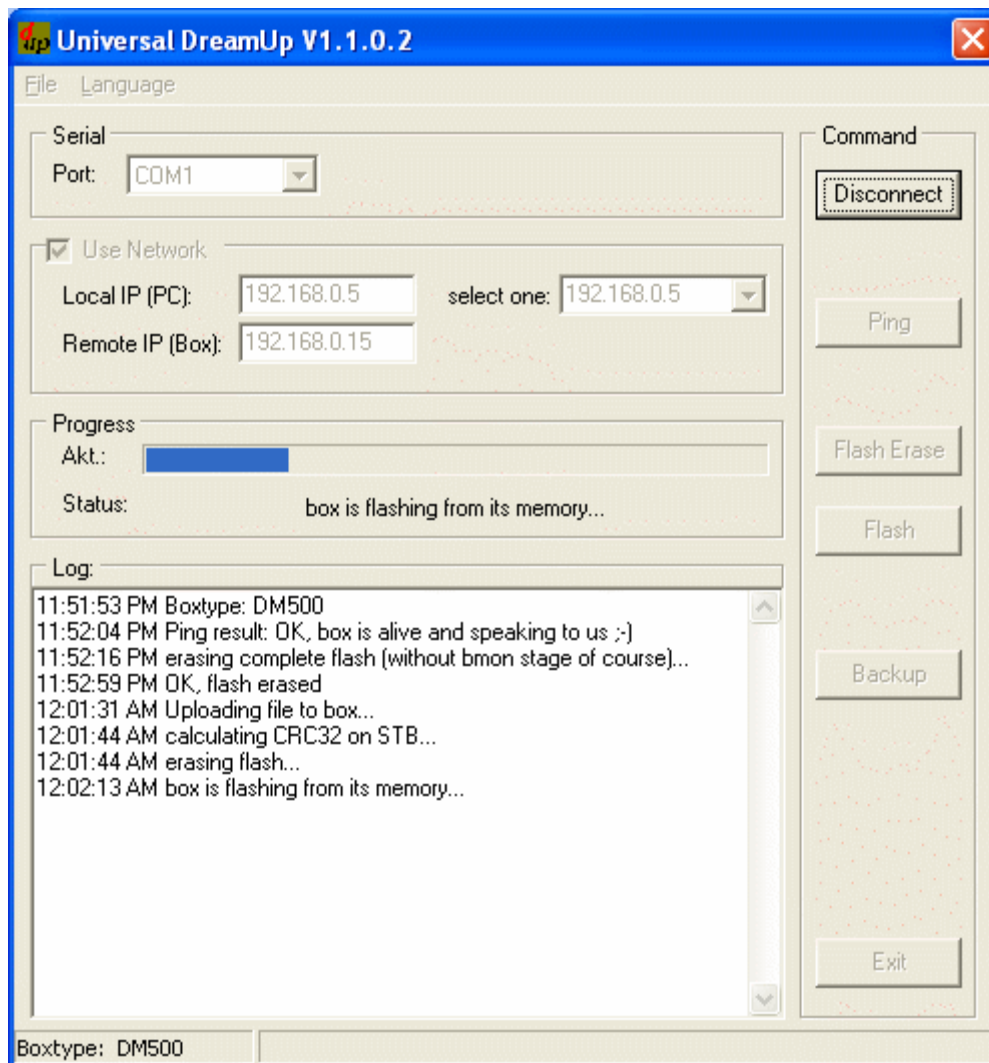
Progress
Akt.:
Status: Uploading file to box...

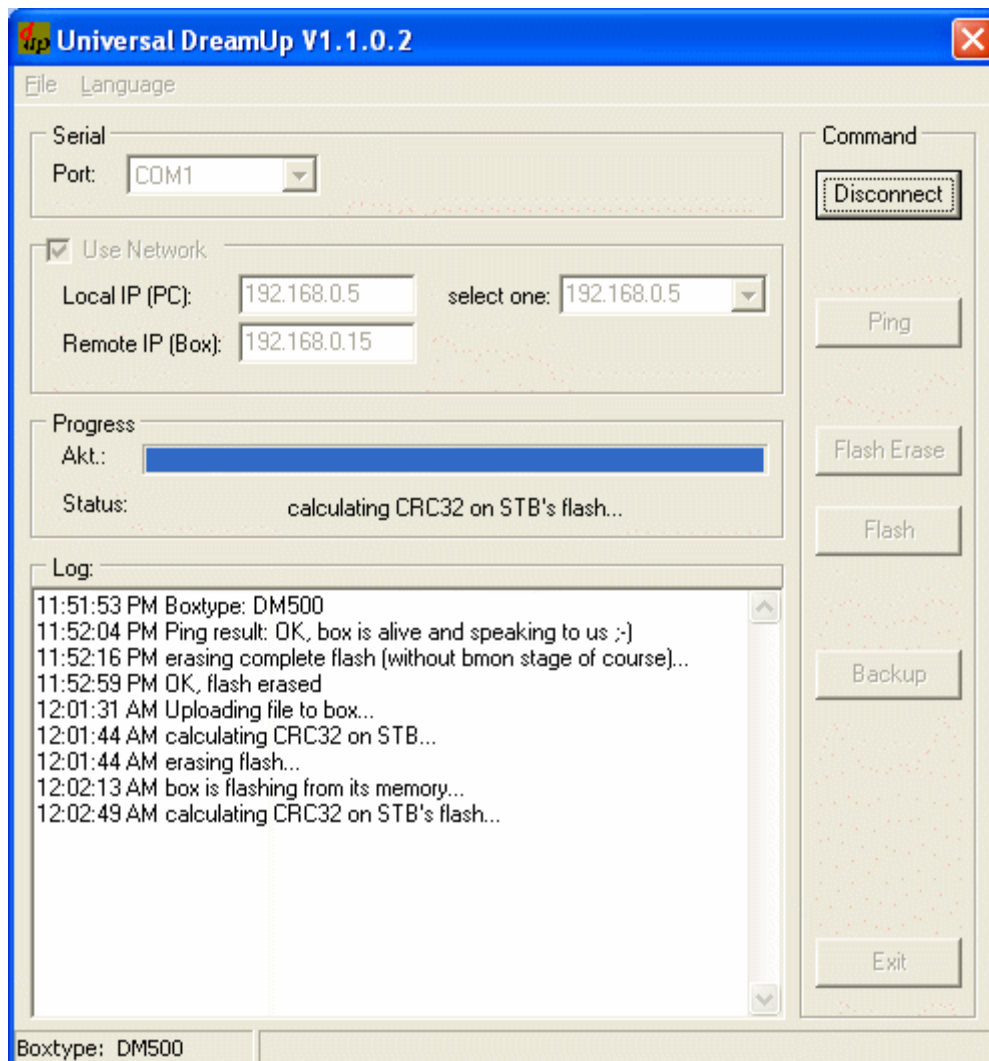
Log:
11:51:53 PM Boxtype: DM500
11:52:04 PM Ping result: OK, box is alive and speaking to us ;-)
11:52:16 PM erasing complete flash (without bmon stage of course)...
11:52:59 PM OK, flash erased
12:01:31 AM Uploading file to box...

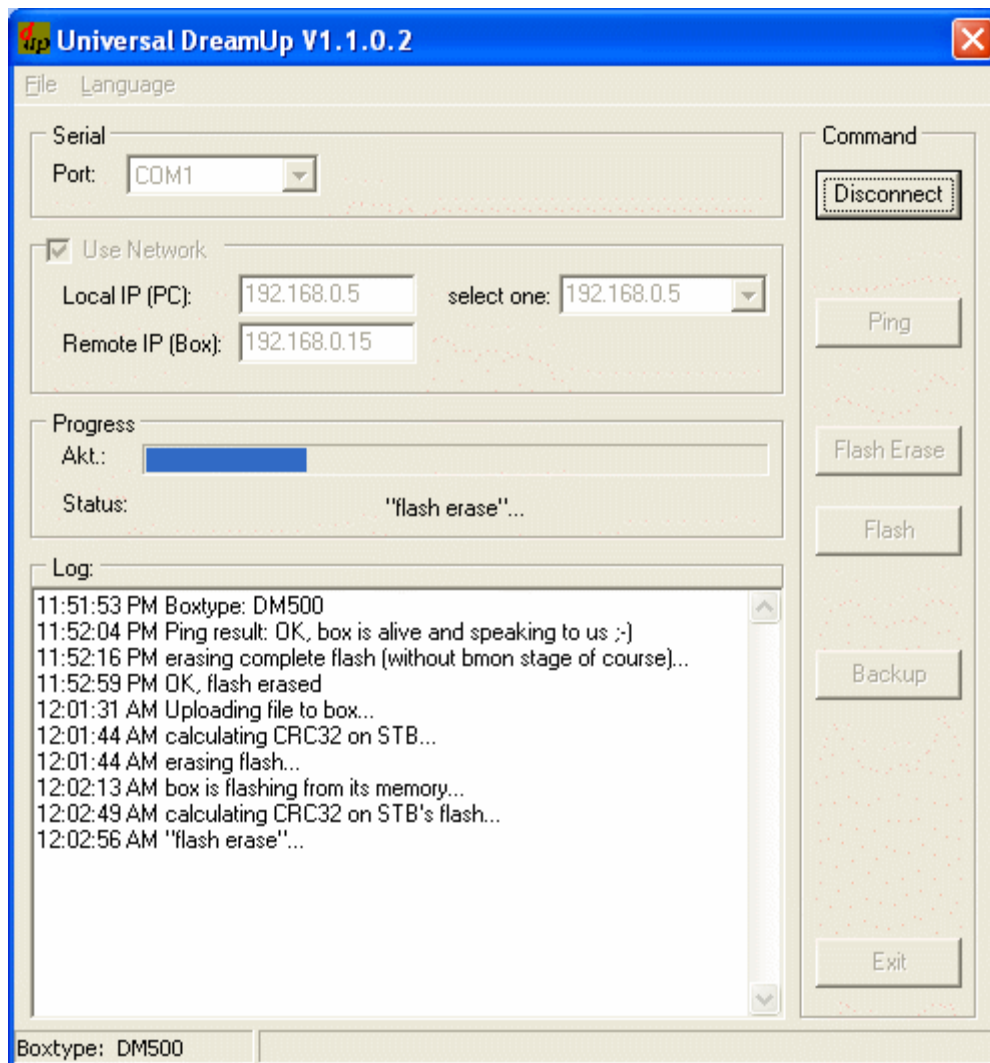
Command
Disconnect
Ping
Flash Erase
Flash
Backup
Exit

Boxtype: DM500 uploading (493 kb/s) approx. 00 minutes and 08 seconds left

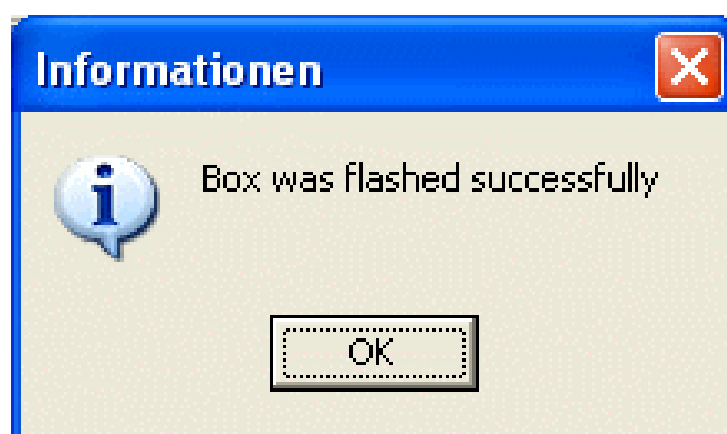








It will tell you when the process is finished.



Disconnect from the Null Modem Cable and connect to your TV.

Initial Set-Up

Nitro is already setup for North America so it defaults to **NTSC**.

The **Save Function** in this image is done differently than in other images. The DreamBox will pause for **10 seconds** while the information is properly saved. This will avoid losing information as has happened with other images.

1. The first screen that you will see gives you an opportunity to select your language.




2. The second screen lets you select your time zone. Highlight the time zone box and press **OK** and then scroll down to find yours. Press the **OK** button to select your

time zone. You will then be asked if you want to **Restart Now** and you will press **Green** button to do so.

Time Zone Setup

Time Zone:

(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Vienna ▾

 save

select your time zone (ok)

Time Zone Setup

Time Zone:

(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Vienna ▾

(GMT-06:00) Central America

(GMT-06:00) Central Time (US and Canada)

(GMT-06:00) Guadalajara, Mexico City, Monterrey

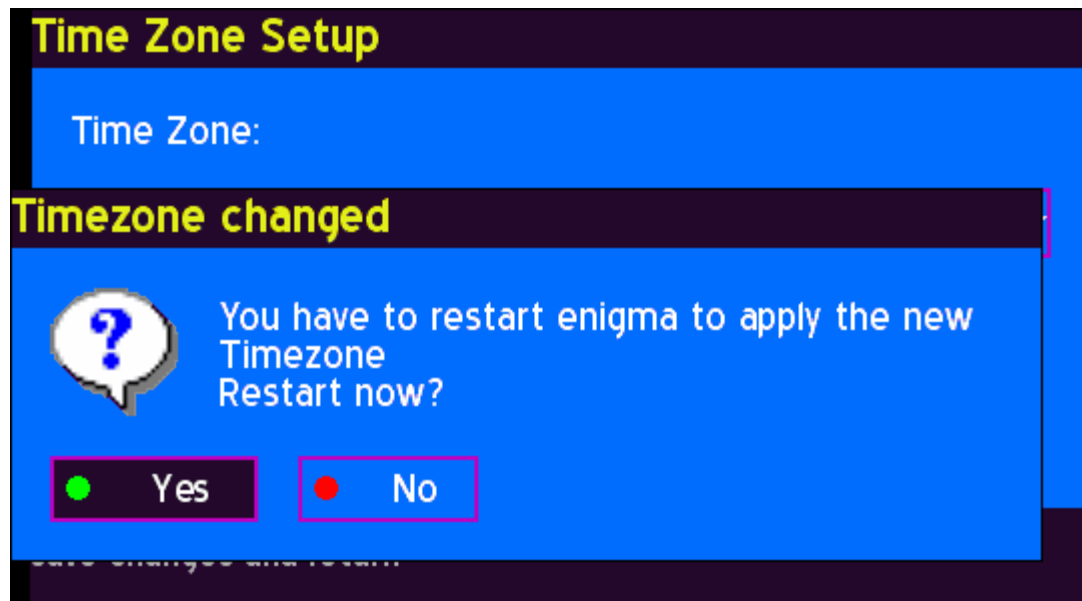
(GMT-06:00) Saskatchewan

(GMT-05:00) Bogota, Lima, Quito

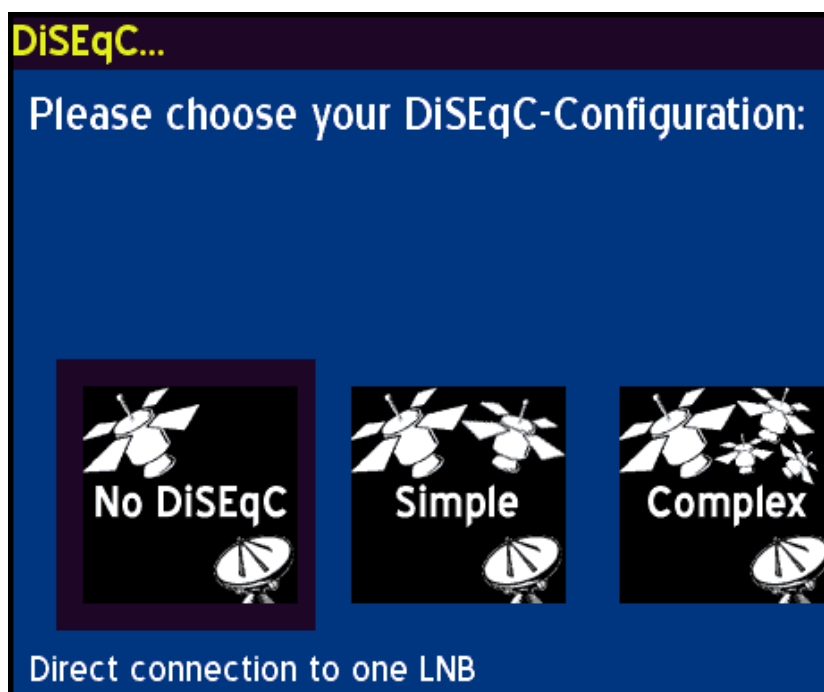
(GMT-05:00) Eastern Time (Us and Canada)

(GMT-05:00) Indiana (East)

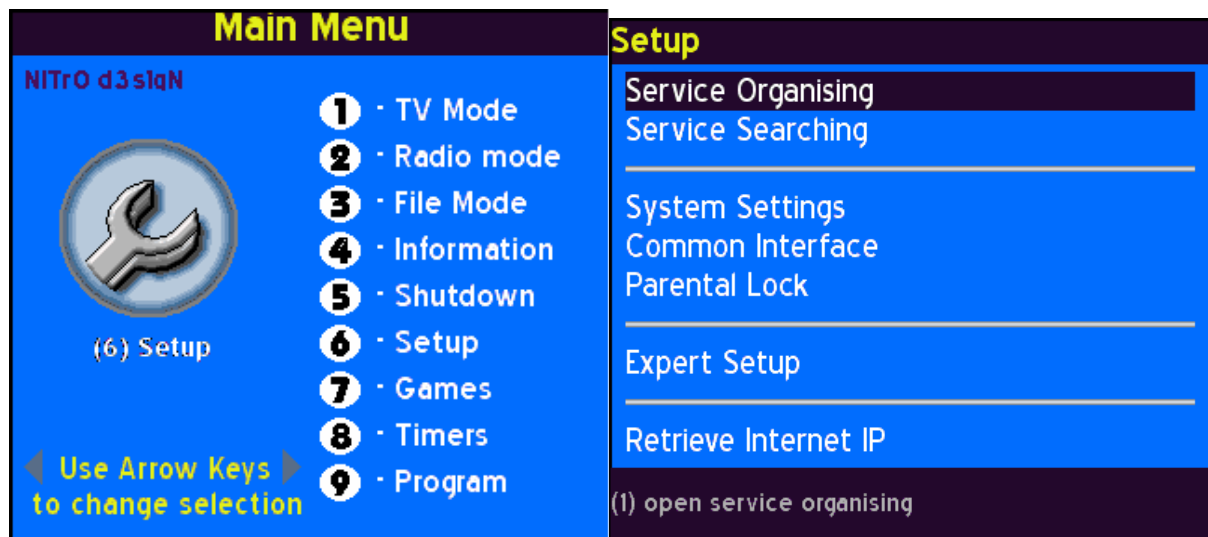
(GMT-04:00) Atlantic Time (Canada)



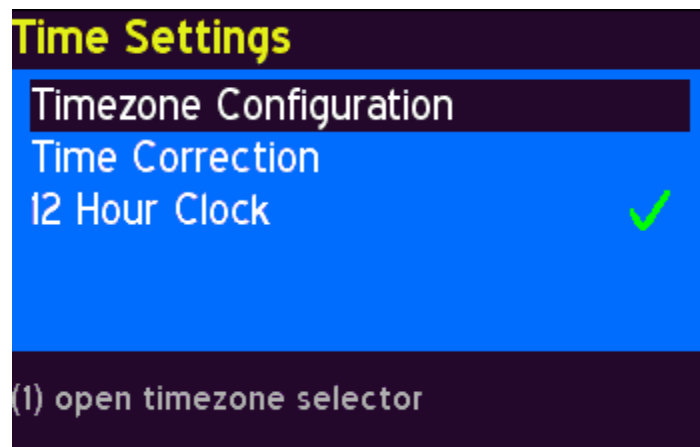
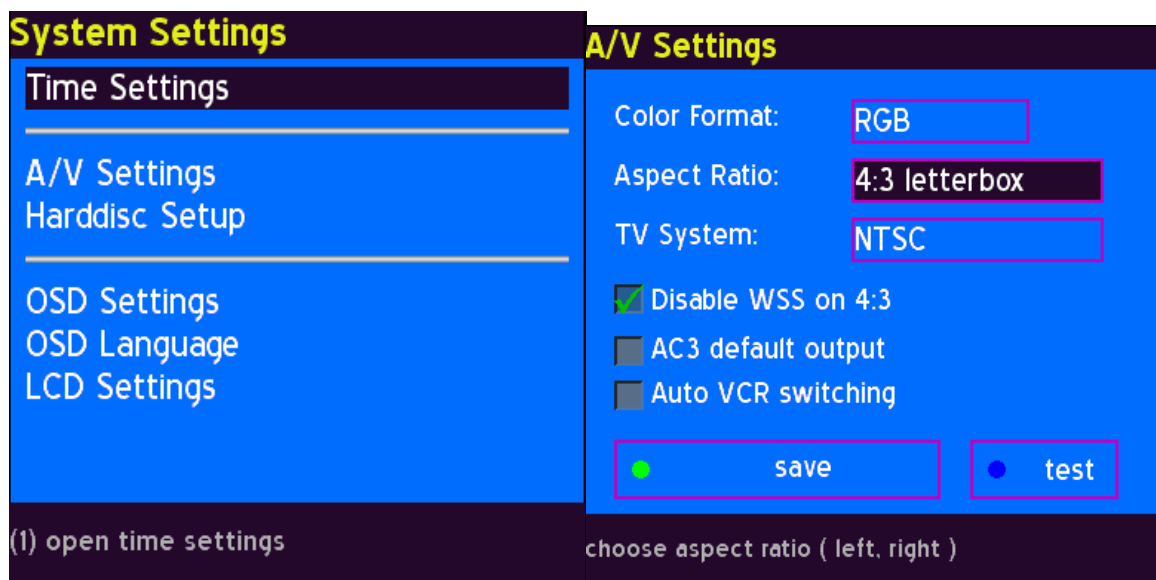
3. The third screen lets you select **DiSEqC Configuration**. Select **No DiSEqC** at this point; we will come back later to this section.

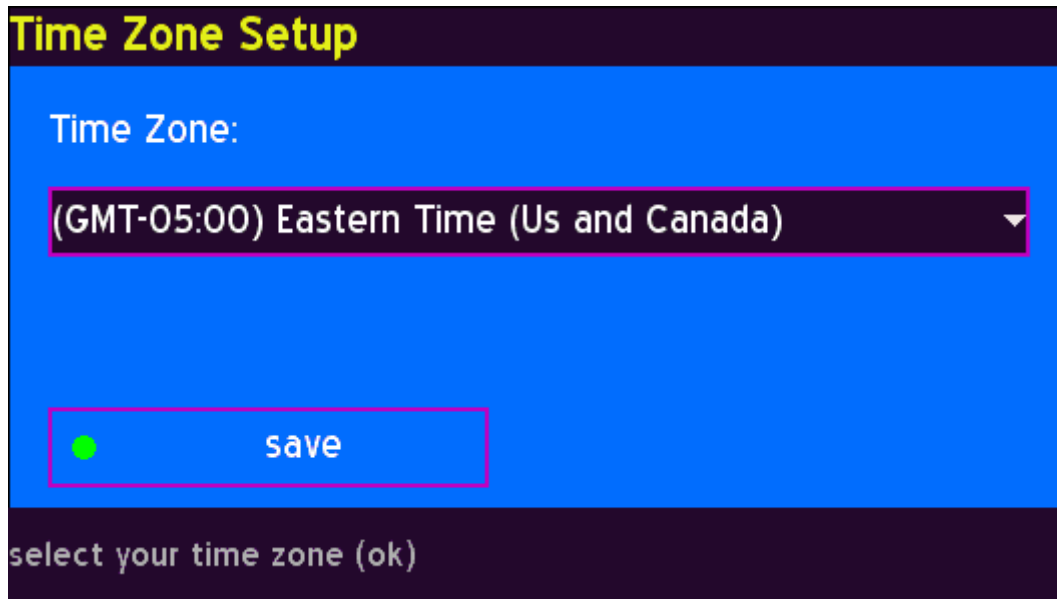


4. Press the **Menu** button and go to **Setup**.



5. Go to **System Settings** to make sure you have all your **A/V Settings** and **Time Settings** correct.





Section 5

Configuring Your Network

Equipment:

1. Router or switch.
2. PC with NIC (Ethernet card).
3. CAT5 LAN cable connecting the PC to your router and your DreamBox to the router. You can use a wireless LAN/Bridge in place of the hard-wired system if you prefer. (A crossover cable also works for those too cheap or lazy to construct a home network.)

Decision Point: Do you want a static or a dynamic IP?

A static IP is necessary if you plan to do any recording and if you want to depend on having the same IP when you get ready to use **DCC** or **DreamBoxEdit**. DHCP is a protocol that allows a router or other equipment to change your IP address as it sees fit. If you use DHCP the DreamBox IP may or may not change every time you reboot the DreamBox. When the IP changes you will not be able to connect from your PC unless you realize that the IP setting has changed. **DHCP is easier** if you do not understand how to get your network settings. There are two ways to get a static IP.

1. Uncheck the DHCP box on Satellite Configuration and enter the correct numbers. (This is the recommended method for obtaining a static IP.)

2. Check off DHCP and tell your router to “reserve” a specific IP for your DreamBox.

Recommended Procedure for using DHCP:

The Nitro image comes preconfigured with DHCP as the default so nothing is necessary if you want to use DHCP.

Communication setup

IP: 192 .168 .0 .7 ☒ DHCP

Netmask: 255 .255 .255 .0

Type: LAN ▼

Nameserver: 206 .74 .254 .2

Gateway: 192 .168 .0 .1

☒ Enable Network Port: 80

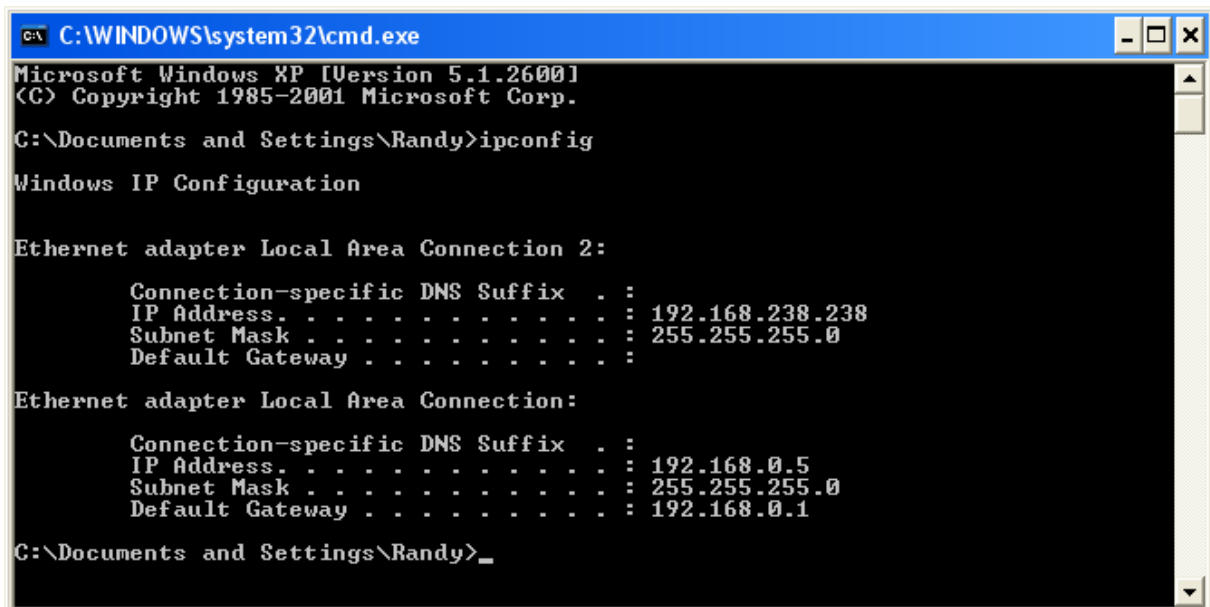
get Network data from a DHCP Server in the local Network

Remember, using **DHCP** allows your PC or router to assign a new IP address to the DreamBox. If the IP changes, you will have to change the IP in **DreamBoxEdit**, **DreamBox Control Center**, and **FlashWizard**.

Recommended Procedure for Setting up a Static IP:

1. Determine your Network settings if you want a static IP.
 - a. You will need the IP address of your router and decide what IP you plan to use for the DreamBox. I recommend using 192.168.0.24 for your DreamBox since some software comes preconfigured with that IP.

- b. Your DreamBox and router must have the same numbers in the first 3 sections of their IPs. i.e. If your router is 192.168.0.1 use 192.168.0.24 for your DreamBox. If the router is 220.120.34.6 then use 220.120.34.24 for your DreamBox.
- c. If you are not sure of your network settings you can find them from your PC. Go to **Start** and click **Run** and enter **cmd** in the blank without the quotes. Enter **ipconfig** at the prompt. **IP Address** is the address of the PC you are on. **Subnet mask** should usually be 255.255.255.0. **Default Gateway** will be used later and is typically your router IP. (You can initially select **DHCP** on the DreamBox **Communications** menu and the DreamBox will fill in a few numbers for you. You can use the numbers to change to a static IP.)



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Randy>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection 2:

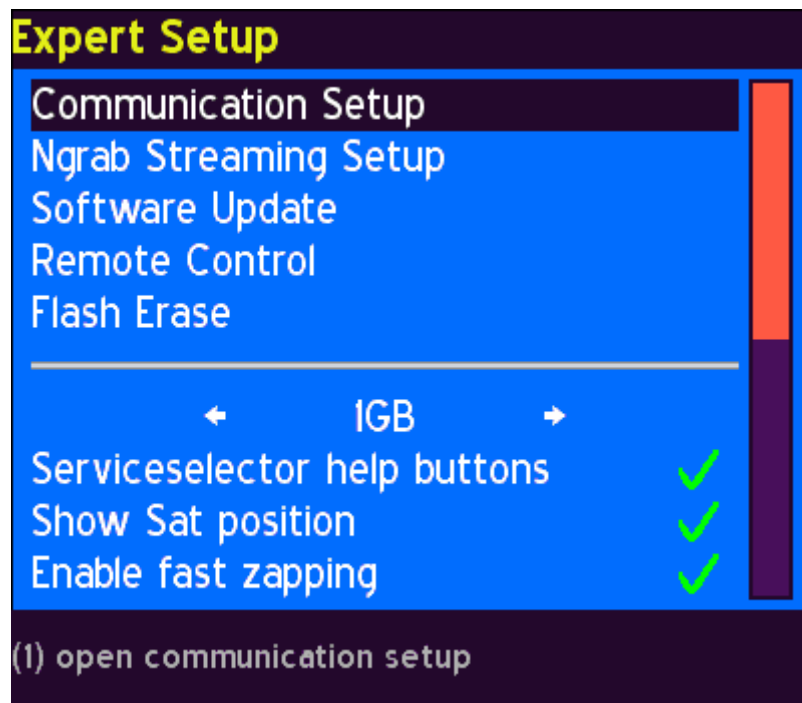
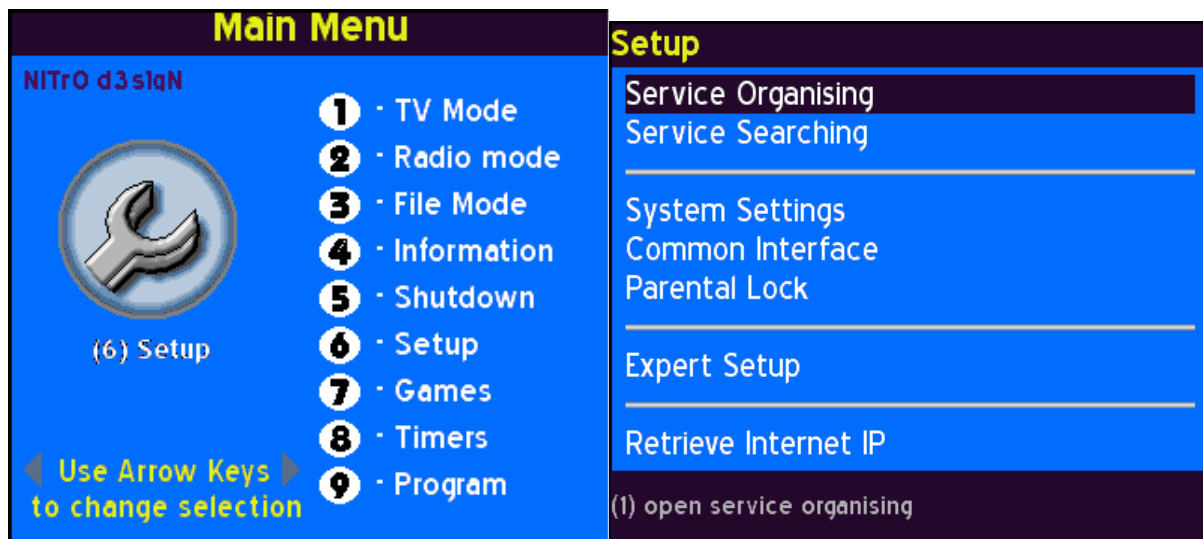
    Connection-specific DNS Suffix  . : 
    IP Address. . . . .               : 192.168.238.238
    Subnet Mask . . . . .             : 255.255.255.0
    Default Gateway . . . . .         : 

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . .               : 192.168.0.5
    Subnet Mask . . . . .             : 255.255.255.0
    Default Gateway . . . . .         : 192.168.0.1

C:\Documents and Settings\Randy>_
```

- 2. Press the **Menu** button to bring up the toolbar at the bottom of the screen. Look for the **Setup** icon and press OK. Go to **Expert Setup** then to **Communication Setup**.



3. Here you will enter the addresses for your network so you can communicate with the DreamBox from other PCs and so you can get to the Internet from the DreamBox if needed. This is also the location for choosing DHCP.

Communication setup

IP: 192 .168 .0 .24 ☐ DHCP

Netmask: 255 .255 .255 .0

Type: LAN ▼

Nameserver: 192 .168 .0 .1

Gateway: 192 .168 .0 .1

☒ Enable Network Port: 80

☒ save ☐ mounts

enter IP Address of the box (0..9, left, right)

DHCP: Uncheck this box or you won't be able to fill in the following blanks.

IP: Is the IP of your DreamBox. Assign it as described above. Usually, 192.168.0.24.

Netmask: Just about always 255.255.255.0.

Type: LAN

Nameserver: Is usually the IP of your router. Usually 192.168.0.1.

Gateway: Is usually the IP of your router. Usually 192.168.0.1.

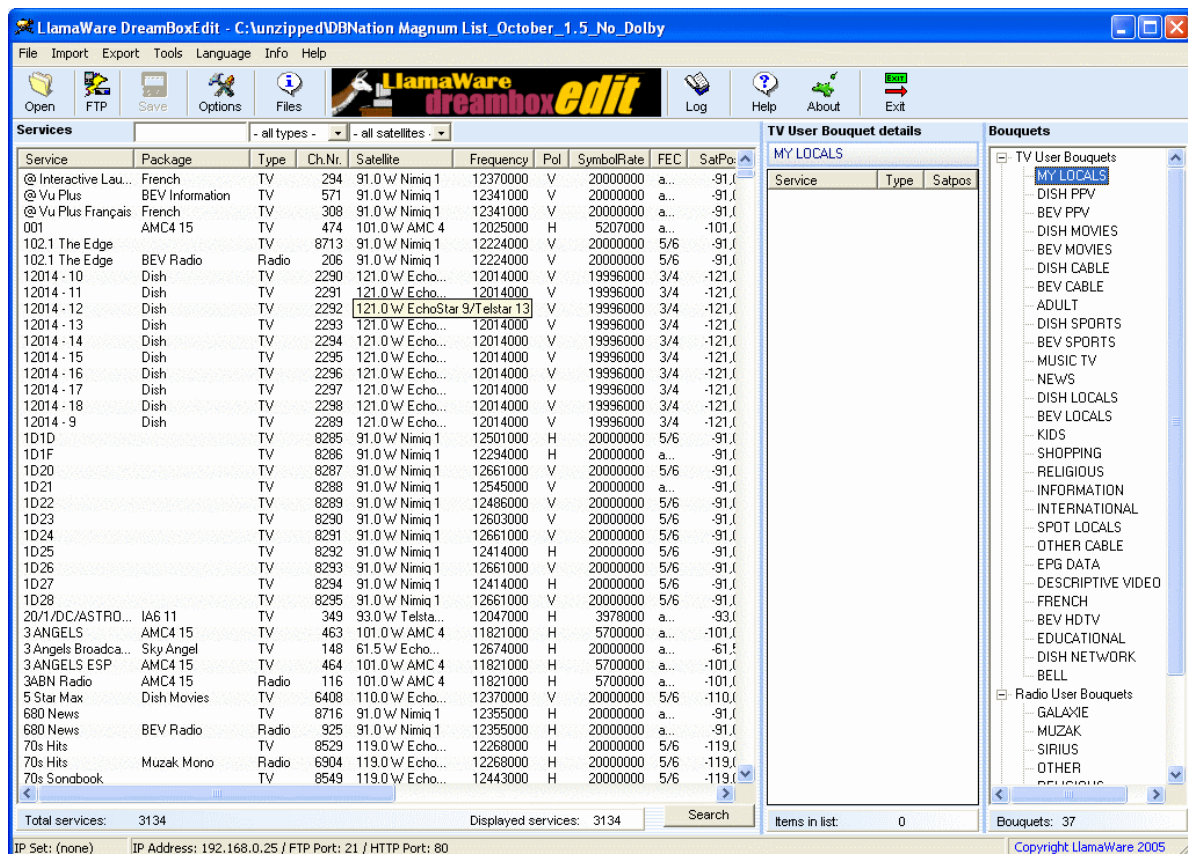
Be sure to check the **Enable Network** box and select save by pressing the **Green** button or highlighting **save** and pressing **OK**.

Your DreamBox will be loaded with a **satellites.xml** file from Europe so you will not be able to select the North American satellites until you have replaced that file. This file is part of the Service List. The Service List, or Channel List as most people refer to it, contains all of the transponder and channel information necessary to tune channels. The current images are not capable of scanning Dish Network or Bell ExpressVu satellites correctly so we use other equipment to scan satellites and make service lists. The newest **DBFN Service List** will always be in the [forum](#) under Channel Lists. Once you scan a satellite with the DreamBox, it automatically replaces the information that was there. In other words, it DELETES the service list information for that satellite.

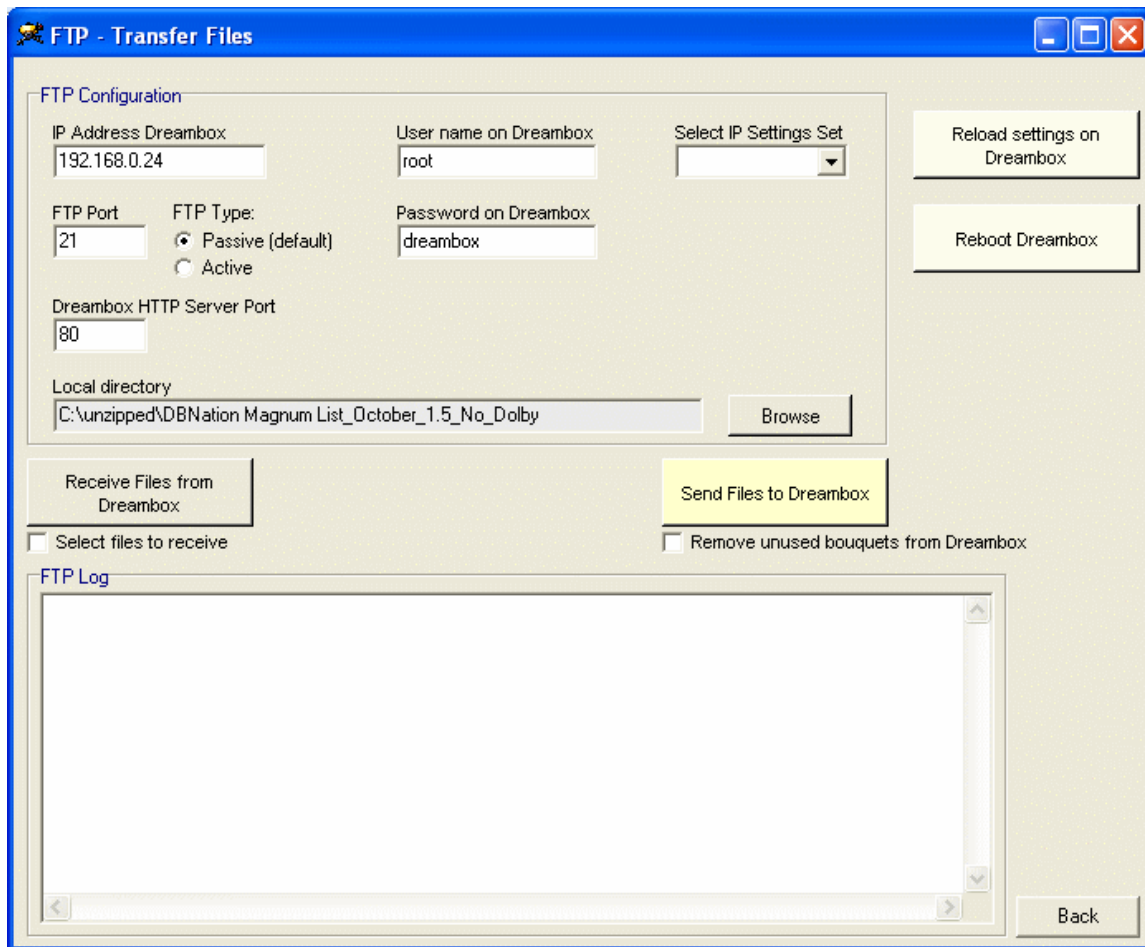
The uploading and backing up of these settings is performed with a program called DreamBoxEdit as well as others that are available. DreamBoxEdit allows you to make changes to your service or channel list manually and allows you to use a stock list from our forum. This program lets you make lists of favorites called **Bouquets**. You will backup your **Bouquets** and **Services** with this program.

Procedure:

1. Download the newest **DBFN Service List** from our [forum](#).
2. Launch the **DreamBoxEdit** program and open the folder to which you extracted the files.



3. You will see something like the above screen. Click the FTP tab.
4. In the next window, make sure the IP Address of your DreamBox is correct.
5. Click **Send Files to DreamBox**.



6. It will say **Reload Settings or Reboot**. Click **Reload settings on DreamBox**.

- You will now be able to select North American satellites and proceed to the next step.
- Anytime you change your satellite configuration settings, as I will explain in the next section, you will need to reload your Service List.

Section 7

Satellite Configuration

I have expanded this section to include the Toroidal dishes, Rotor systems with both USALS and non-USALS motors, Dish Network dual output single LNBs, Dish Pro 500 systems, and Super Dish systems.

Multiple satellites can be tuned by the DreamBox with multiple LNBs on a fixed dish such as the T90 which can tune as many as 16 satellites.....



http://www.dreamboxfornewbies.org/downloads/Aiming_a_Toroidal_Dish-T90_and_T55.pdf for help with aiming the T90.

Or with two LNBs on a rotor or the Invacom QPH-031 Quad Polar LNB on a rotor either of which will turn a dish with a circular and linear LNB to tune every satellite within its arc.



Or with Dish Network or DirectTV dual LNBs



Or with Dish Pro 500 Systems



Or with Dish Network Super Dish Systems



A: Toroidal Dish Configuration

I will provide you with an example to demonstrate how this should be done. This example will be for 4 LNBS connected to a 4x1 DiSEqC switch tuning satellites at 82, 91, 110, and 119 degrees.

I will assume that you have your dish aligned correctly and that you have LNBS aimed at these 4 satellites connected by RG6 cables to a 4x1 switch.



1. Connect 82 to Input 1.
2. Connect 91 to Input 2.
3. Connect 110 to Input 3.
4. Connect 119 to Input 4.
5. Connect an RG6 cable to the **Receiver** output post on the switch and connect to the **In** post on the DreamBox

Procedure:

1. Using the remote control press **Menu** and go to **Settings** then **Service Searching** then **Satellite Configuration** to the following screen.

Satellite Configuration

non-standard user defined configuration...

Sat/Position	LNB	22Khz	Voltage
97.0 W Telstar 5	0	Hi/Lo	H/V
105.0 W AMC 2	1	Hi/Lo	H/V
110.0 W EchoStar 6	2	Hi/Lo	H/V
119.0 W EchoStar 7	3	Hi/Lo	H/V

● save ● new ● erase

select your configuration here

2. Choose **non-standard user defined configuration** from the top drop-down menu.

3. Choose your desired satellite: **97.0** in this example.
4. Select **LNBO** and press the **OK** button. Do not make any other changes to the **Satellite Configuration** page.
5. At this new screen, change the **LOF/H** value to **10750** or **10600** depending on the LNB type. All other items should stay at their default values.

LNB Configuration

Sat/LNB mapping: LNB 0

LOF/L: 0 9 7 5 0

LOF/H: 1 0 7 5 0

Threshold: 1 1 7 0 0

☐ increased voltage

save next page

here you can change your sat/lnb mapping

6. Press the **Blue** button to take you to the next page.

LNB Configuration

1 Toneburst:

2 DiSEqC Mode:

3 DiSEqC Parameter:

4 DiSEqC Repeats:

5 Uncommitted Switch:

6 ☐ Sequence repeat

7 ☒ Swap Commands

None

Version 1.1

B/A

None

Input 1

Fast DiSEqC

prev. page

save

goto next page (DiSEqC)

7. **Toneburst** should be **None**.
8. The **DiSEqC Mode** should be **1.0** or **1.1**. Either will work.
9. Change the **DiSEqC Parameter** to **A/A** for LNB0.
10. **Uncommitted Switch** should be set to **None** unless you are using a Spaun 220 or 420 uncommitted switch.
11. Boxes 6-8 should be unchecked.
12. Press the **Green** button or arrow down to the **save** box and save the changes you have just made.
13. Press the **Yellow** button to add another satellite and repeat this procedure to add all 4 satellites with the following settings:

Satellite	LNB	LOF/H	Toneburst	DiSEqC Mode	DiSEqC Parameter
82	0	11250	None	1.0	A/A
91	1	11250	None	1.0	A/B
110	2	11250	None	1.0	B/A
119	3	11250	None	1.0	B/B

14. Press the **Green** button or arrow down to the **save** box and save the changes you have just made on the page that lists all the satellites to complete this configuration.

Now that you are an expert and want more than 4 satellites you may want to extrapolate these directions to 8 (or even more) satellites if you have a T90.

For 8 Satellite positions:

- 1 Spaul DiSEqC uncommitted switch - SUR 220F or 420F
- 2 Spaul DiSEqC switches - SAR 411F
- 8 LNBs

LNB	Toneburst	DiSEqC Mode	DiSEqC Parameter	Switch Input	Swap Command
0	None	1.1	A/A	1	+
1	None	1.1	A/B	1	+
2	None	1.1	B/A	1	+
3	None	1.1	B/B	1	+
4	None	1.1	A/A	2	+
5	None	1.1	A/B	2	+
6	None	1.1	B/A	2	+
7	None	1.1	B/B	2	+

Tips:

- **LOF/H** is 11250 for circular LNBs like we use for DISH, DirecTV, and Bell ExpressVu. (No, the DreamBox cannot receive DirecTV.)
- **LOF/H** is 10600 or 10750 for linear LNBs like we use for 97, 105, and 121. (Standards are 10750; Universals are 10600)
- If your RG6 run is fairly long, change the **DiSEqC Mode** to **1.1** and add a **Repeat** of **one**. This sends a duplicate command to the switch.

Go to <http://www.dreamboxfornewbies.org/html/wiring.htm> for diagrams explaining how to wire different combinations of satellites and LNBs with a fixed dish.

B. Rotor Dish Configuration

I will provide you with an example to demonstrate how this should be done. This example will be for 2 LNBs, one linear standard and one circular, connected to a 22 kHz switch tuning satellites at 82, 91, 110, 119, 148, 97, 105, and 121 degrees.

Equipment:

1. 30 inch or larger dish with a circular LNB for R and L polarization and linear standard LNB for H and V polarization. A universal linear LNB will not work with the 22 kHz switch.
2. 22 kHz switch. (A DiSEqC switch will also work but a simple on and off switch such as a 22 kHz switch will work just as well.)
3. Rotor. I recommend the Stab HH series. Some of the others lose position memory. The Stab HH rotor also can be setup easier using the **Gotoxx protocol**. I will add this in future **Newbies**.

Procedure:

1. Mount the dish and make sure everything is level and plumb.
2. Install the linear LNB in the center of the dish.
3. Install the circular LNB just to the left of the linear LNB as you are looking at the front of the dish.
4. Connect the circular LNB to the **OFF** pole of the switch and the linear LNB to the **ON** pole of the switch.



5. Connect the RG6 cable from the switch to the Rotor and another from the Rotor to the DreamBox.
6. Aim the dish in the approximate direction of your first satellite.

Satellite Configuration for those with Rotors

Procedure:

1. Using the remote control press **Menu** and go to **Settings** then **Service Searching** then **Satellite Configuration**.
2. Choose **many satellites via DiSEqC Rotor** from the top drop-down menu.
3. Let's make the circular polarized LNB = **LNBO** and the linear LNB = **LNBI**.
4. Choose your first desired satellite – 119W in this example because it has a very strong signal.

The screenshot shows the 'Satellite Configuration' screen. At the top, there is a dropdown menu set to 'non-standard user defined configuration...'. Below this is a table with four columns: 'Sat/Position', 'LNB', '22Khz', and 'Voltage'. The table lists five satellites: 82.0 W Nimiq 2, 148.0 W EchoStar 1, 119.0 W EchoStar 7, 110.0 W EchoStar 6, and 91.0 W Nimiq 1. Each row has dropdown menus for LNB (all set to 0), 22Khz (all set to Hi/Lo), and Voltage (all set to H/V). At the bottom of the table are three buttons: 'save' (green dot), 'new' (yellow dot), and 'erase' (red dot). Below the buttons is a text prompt 'select your configuration here'.

Sat/Position	LNB	22Khz	Voltage
82.0 W Nimiq 2	0	Hi/Lo	H/V
148.0 W EchoStar 1	0	Hi/Lo	H/V
119.0 W EchoStar 7	0	Hi/Lo	H/V
110.0 W EchoStar 6	0	Hi/Lo	H/V
91.0 W Nimiq 1	0	Hi/Lo	H/V

save new erase

select your configuration here

5. Select and highlight **LNBO** and press the **OK** button. Do not make any other changes to this page.
6. At this new screen, change the **LOF/H** value to **11250**. All other items should stay at their default values.

LNB Configuration

Sat/LNB mapping: LNB 0

LOF/L: 0 9 7 5 0

LOF/H: 1 1 2 5 0

Threshold: 1 1 7 0 0

☐ increased voltage

● save ● next page

here you can change your sat/lnb mapping

7. Press the **Blue** button to take you to the next page.

LNB Configuration

① Toneburst: None

② DiSEqC Mode: Version 1.2

③ DiSEqC Parameter: A/A

④ DiSEqC Repeats: None

⑤ Uncommitted Switch: None

⑥ ☐ Sequence repeat ⑧ ☐ Fast DiSEqC

⑦ ☐ Swap Commands

● prev. page ● save

swaps committed and uncommitted DiSEqC Commands

8. Change **DiSEqC Mode** to **1.2**.
9. Change **DiSEqC Parameter** to **A/A**.
10. Press the **Green** button or the down arrow button to the **Save** box and save the changes you have just made.
11. Press the **Yellow** button to add another satellite and repeat this procedure to add all of the satellites requiring circular LNBs (R or L polarization) with the following settings:

Satellite	LNB	22kHz	LOF/H	Toneburst	DiSEqC Mode	DiSEqC Parameter
61.5	0	Off	11250	None	1.2	A/A
82	0	Off	11250	None	1.2	A/A
91	0	Off	11250	None	1.2	A/A
110	0	Off	11250	None	1.2	A/A
119	0	Off	11250	None	1.2	A/A
148	0	Off	11250	None	1.2	A/A

12. Then use the above procedure to add all of the satellites requiring linear LNBs (V or H polarization).
13. Use **10750** for the **LOF/H**.

Satellite	LNB	22kHz	LOF/H	Toneburst	DiSEqC Mode	DiSEqC Parameter
97	1	On	10750	None	1.2	A/A
105	1	On	10750	None	1.2	A/A
121	1	On	10750	None	1.2	A/A

14. Press the **Green** button or the down arrow button to the **Save** box and save the changes you have just made.

Satellite Configuration

non-standard user defined configuration...

Sat/Position	LNB	22Khz	Voltage
95.0 W Galaxy 3C	1	Hi/Lo	H/V
97.0 W Telstar 5	1	Hi/Lo	H/V
103.0 W AMC 1	1	Hi/Lo	H/V
99.0 W Galaxy 4R	1	Hi/Lo	H/V
105.0 W AMC 2	1	Hi/Lo	H/V



save



new



erase

press ok to goto LNB config

LNB Configuration

- 1 Toneburst: None
- 2 DiSEqC Mode: Version 1.2
- 3 DiSEqC Parameter: A/A
- 4 DiSEqC Repeats: None
- 5 Uncommitted Switch: None

6 ☐ Sequence repeat

8 ☐ Fast DiSEqC

7 ☐ Swap Commands



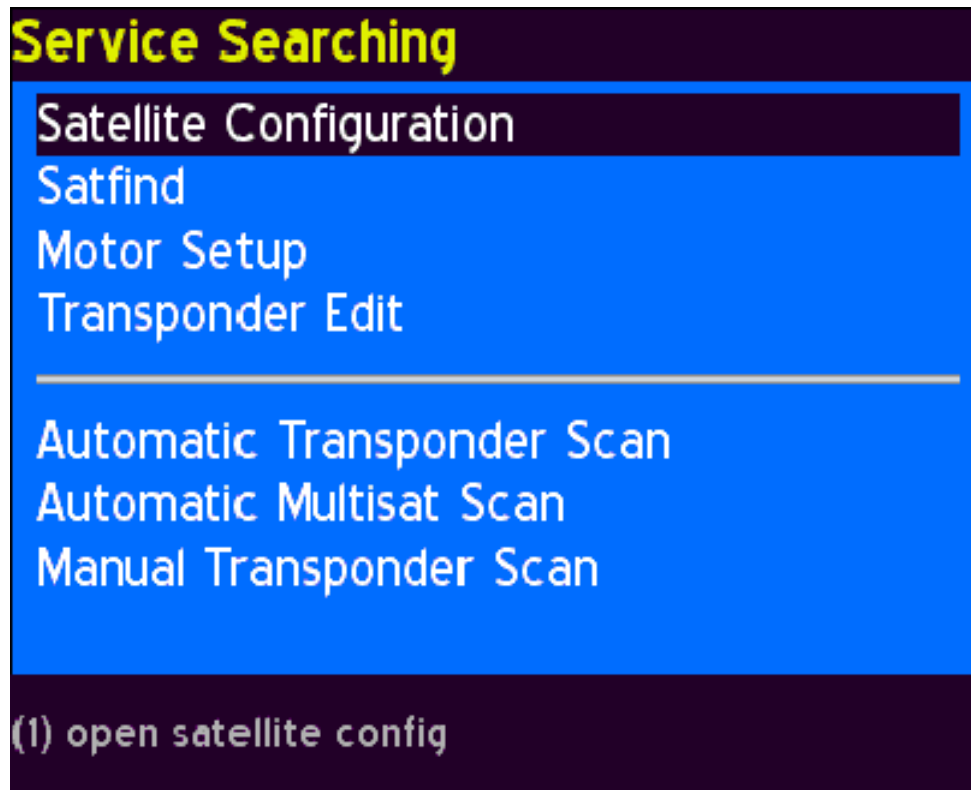
prev. page



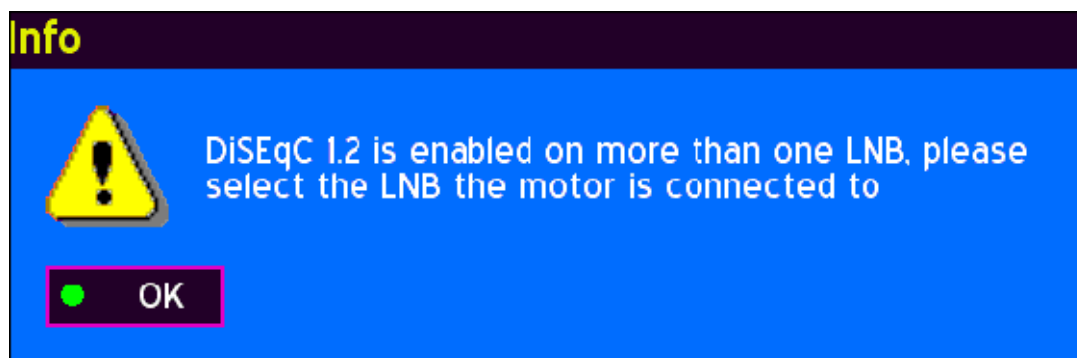
save

swaps committed and uncommitted DiSEqC Commands

15. Use the remote to select **Motor Setup**.



16. You get a message that says you have more than one LNB. Press **OK**.



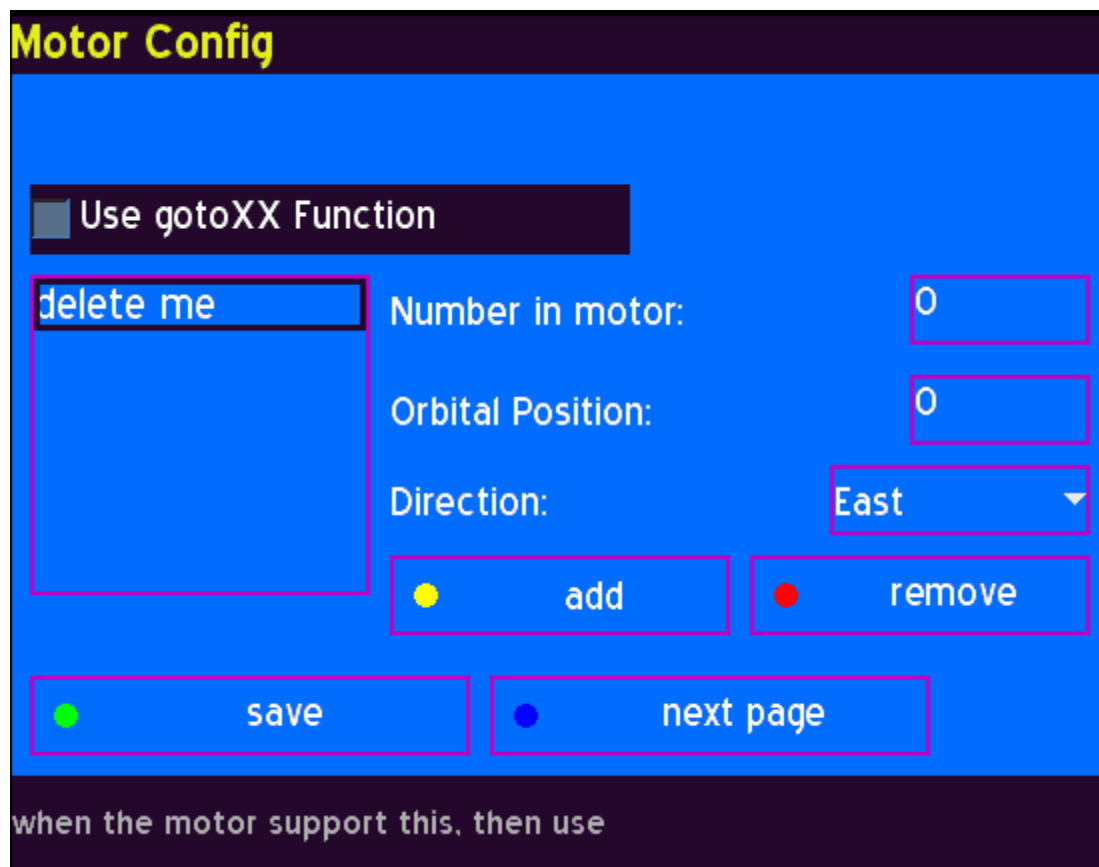
17. Select **LNB 0**.



FROM HERE THE PROCEDURE FOR NON-USALS
AND USALS MOTORS DIFFER

Non-USALS Protocol

1. Uncheck the **Use gotoXX Function**.



2. Browse down to **Number in Motor** and enter **1**.
3. Browse down to **Orbital Position** and enter **1190** for the 119W satellite.
4. Browse down to **Direction** and select **West** from the drop-down menu.

The screenshot shows a 'Motor Config' screen with a blue background and a dark purple header. The header contains the text 'Motor Config' in yellow. Below the header, there is a checkbox labeled 'Use gotoXX Function'. To the left of the configuration fields is a large blue rectangular area with a red border, containing the text 'delete me'. To the right of this area are three input fields: 'Number in motor:' with the value '1', 'Orbital Position:' with the value '119', and 'Direction:' with a dropdown menu showing 'West'. Below these fields are two buttons: 'add' (with a yellow dot) and 'remove' (with a red dot). At the bottom of the screen are two more buttons: 'save' (with a green dot) and 'next page' (with a blue dot). A dark purple footer bar at the very bottom contains the text 'choose direction'.

Motor Config

☐ Use gotoXX Function

delete me

Number in motor: 1

Orbital Position: 119

Direction: West

add remove

save next page

choose direction

5. Press **Blue** button.

Motor Config

Mode: position

Satellite: 119.0 W EchoStar 7

Transponder: 12239 / 20000 / H

Direction: ← Stop →

● prev page ● store ● search

SNR 0%
AGC 0%
BER 0

LOCK SYNC

choose the Transponder you wish to find

6. Browse down to **Mode** and select **position** from the drop-down menu.
7. Browse down to **Satellite** and select **119.0 W EchoStar 7** from the drop-down menu.
8. Browse down to **Transponder** and select **12239 / 20000 / H** from the drop-down menu.
9. Browse down to **Direction** and press the **left** or **right** arrow button on the remote to move the dish **one step** to the East or West.

Tip: If you hold the button down too long, the dish will turn to the furthest position to the east or west. You need to make sure you press short clicks and wait 4 seconds between each press of the remote button.

10. Keep turning the dish until you see the **SNR** reach its maximum for that satellite. You will need to adjust the elevation at the dish.

11. Once you reach the maximum press the **Green** button or the down arrow button to the **Store** box and store this position.
12. On the screen that comes up enter **1** in the **Storage Location** box and press the **Green** button or the down arrow button to the **Save** box and save the changes you have just made.
13. Browse down to **Mode** and select **recalculate** from the drop-down menu.
14. Press the **Green** button or the down arrow button to the **recalculate** box and save the changes you have just made.
15. It will then ask **Are you sure?** Press the **Green** button or the down arrow button to the **Yes** box to save.
16. Press the **Yellow** button or the down arrow button to the **prev page** box.
17. Browse down to **Number in Motor** and enter **2**.
18. Browse down to **Orbital Position** and enter **910** for 91W satellite.
19. Browse down to **Direction** and select **West** from the drop-down menu.
20. Press **Yellow** button to or the down arrow button to the **add** box.
21. Repeat this procedure until all of your circularly polarized satellites are entered. In this example that would be: 82, 91, 110, 119, and 148.
22. Press the **Exit** button and then select **Motor Setup**.
23. You get a message that says you have more than one LNB. Press **OK**.
24. Select **LNB 1**.
25. Start over with [Step 32](#) above to enter the linearly polarized satellites. In this example that would be: 97, 105, and 121.

You will now need to scan any satellites that are not listed in your **DBFN Service List**.

USALS Protocol



1. Check the Use **gotoXX Function** and enter your coordinates.

Motor Config

☒ Use gotoXX Function

Longitude: 80.034 West

Latitude: 35.198 North

 save  next page

save changes and use the selected LNB (in first page) for the choosen satellite

2. Press the **Green** button to save your settings.
3. Start **DreamBoxEdit** and reload your channel list since you have changed your Sat Config settings.
4. Go back to Motor Setup until you get to the gotoXX page again.
5. Press the **Blue** button to go the next page. Select 148W and tune that satellite.

Motor Config

Mode: position

Satellite: 148.0 W EchoStar 1

Transponder: 12632 / 20000 / V

Direction: ← Stop →

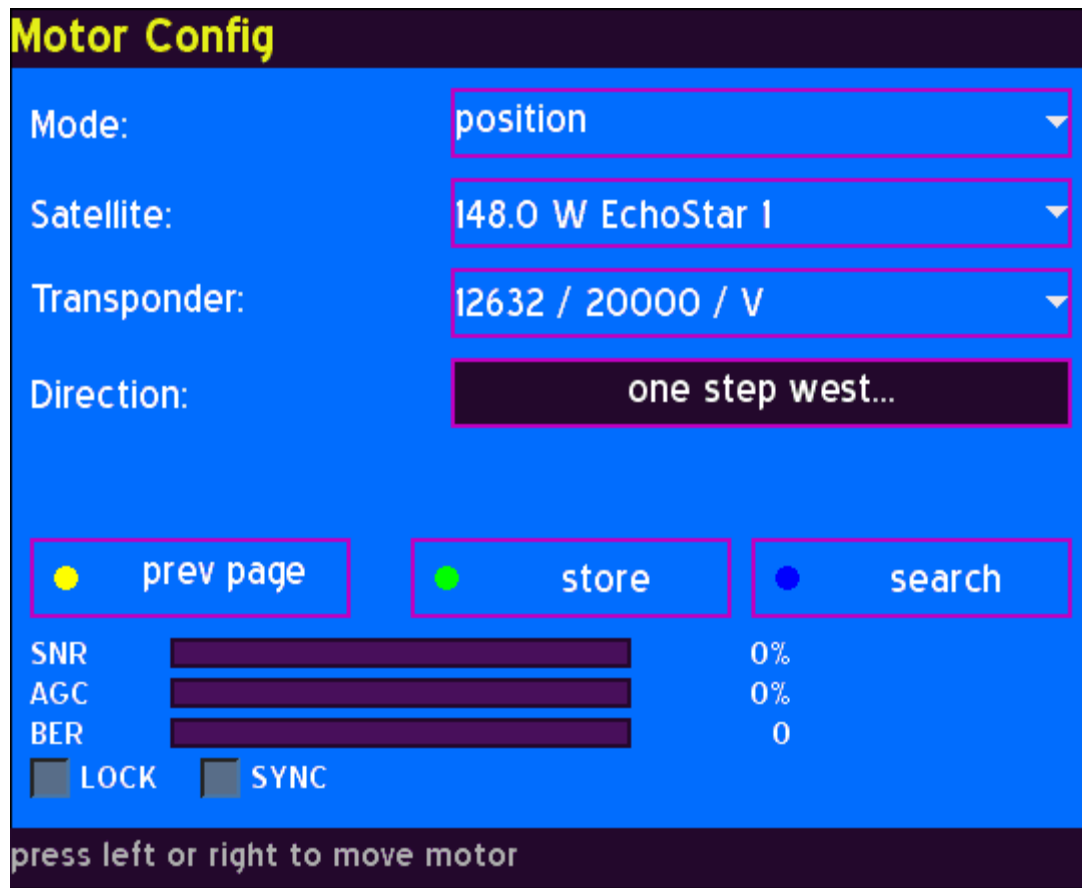
● prev page ● store ● search

SNR 0%
AGC 0%
BER 0

LOCK SYNC

choose the Transponder you wish to find

6. Highlight the **Direction** box and use the **Left** and **Right Arrow** buttons to get the best SNR possible. A little analog Sat Finder meter may be helpful. After you get a reasonable SNR of 80 or greater you could connect a Dish Network receiver to the LNB and see what satellite it is that you found just to confirm your aim.



7. Select store by using the arrow buttons on the remote or by pressing the **Green** button.
8. Repeat **Steps 4 – 7** with 61.5W. This will give you one satellite at each extreme. You can repeat with 110W toward the middle of your arc as well.

You will now need to scan any satellites that are not listed in your **DBFN Service List**.

C. Single Dual Output LNBs

This is a system with any size dish that is fixed/stationary and single circularly polarized LNBs.



Examples include: DirecTV dishes or Legacy Dish Network dishes with 2 or more dual output single LNBs strapped together. Dual LNBs have dual outputs but only one head. This is not a twin LNB system and Legacy Twins and Legacy Quads will not work.

I will provide you with an example to demonstrate how this should be done. This example will be for 2 LNBs connected to a 4x1 DiSEqC switch tuning satellites at 110 and 119 degrees.

I will assume that you have your dish aligned correctly and that you have LNBs aimed at these 4 satellites connected by RG6 cables to a 4x1 switch or to a 2x1 switch.



1. Connect 119W to Input 1.
2. Connect 110W to Input 2.
3. Connect an RG6 cable to the **Receiver** output post on the switch and connect to the **In** post on the DreamBox.

Procedure:

1. Using the remote control press **Menu** and go to **Settings** then **Service Searching** then **Satellite Configuration** to the following screen.

Satellite Configuration

non-standard user defined configuration...

Sat/Position	LNB	22Khz	Voltage
119.0 W EchoStar 7	0	Hi/Lo	H/V
110.0 W EchoStar 6	1	Hi/Lo	H/V

● save ● new ● erase

close Satellite Configuration

2. Choose **non-standard user defined configuration** from the top drop-down menu.
3. Choose your desired satellite: **119.0 W** in this example.
4. Select **LNBO** and press the **OK** button. Do not make any other changes to the **Satellite Configuration** page.
5. At this new screen, the **LOF/H** value should already be **11250** so should not need to be changed. All other items should stay at their default values.

LNB Configuration

Sat/LNB mapping: LNB 0 ▾

LOF/L: 0 9 7 5 0

LOF/H: 1 1 2 5 0

Threshold: 1 1 7 0 0

☐ increased voltage

● save ● next page

here you can change your sat/lnb mapping

6. Press the **Blue** button to take you to the next page.

LNB Configuration

1 Toneburst:

2 DiSEqC Mode:

3 DiSEqC Parameter:

4 DiSEqC Repeats:

5 Uncommitted Switch:

6 ☐ Sequence repeat

7 ☐ Swap Commands

None ▾

Version 1.2 ▾

A/A ▾

None ▾

None ▾

8 ☐ Fast DiSEqC

●
prev. page

●
save

goto next page (DiSEqC)

7. **Toneburst** should be **None**.
8. The **DiSEqC Mode** should be **1.0** or **1.1**. Either will work.
9. Change the **DiSEqC Parameter** to **A/A** for LNBO.
10. **Uncommitted Switch** should be set to **None**.
11. Boxes 6-8 should be unchecked.
12. Press the **Green** button or arrow down to the **save** box and save the changes you have just made.
13. Press the **Yellow** button to add another satellite and repeat this procedure to add both satellites with the following settings:

Satellite	LNB	LOF/H	Toneburst	DiSEqC Mode	DiSEqC Parameter
119	0	11250	None	1.0	A/A
110	1	11250	None	1.0	A/B

14. Press the **Green** button or arrow down to the **save** box and save the changes you have just made on the page that lists all the satellites to complete this configuration.

D. DishPro 500 System

This is a DishPro 500 system with a twin LNB. The twin LNB is a combination of two LNBs housed in the same plastic shroud.



The legacy and the DishPro twin both have an internal switch. The legacy has a proprietary SW42 switch that will not work easily with FTA equipment. The DishPro twin has an internal DiSEqC switch that works well. The DishPro twin has the following big black logo on the back of it.



These DishPro twins have both Right and Left polarities on the same RG6 cable by "stacking". The internal DiSEqC switch changes the signal from 119 to 110. The "stacking" requires that you use one of the DishPro Channel Lists from <http://www.dreamboxfornewbies.net>.

You can also use the DP34 switch that likely came with your dish with your DreamBox.



The **DP34 switch** is a 3x4 multiswitch. It allows you to connect 3 satellites as inputs and up to 4 receivers as outputs. It only works with DishPro twins, DishPro quads, and DishPro single LNBs. Your DishPro twin or quad will fill 2 of the inputs leaving 1 more input available for the single.

119W is always LNB0 and 110W is always LNB1.

There can only be one DiSEqC switch between the LNB and the receiver. You cannot use another DiSEqC switch with this equipment because the internal DishPro switch would make a total of two.

You can use a 22kHz switch or a Spaun SUR-220 or 420 uncommitted switch to join the twin to another LNB or DiSEqC system.

I will provide you with an example to demonstrate how this should be done. This example will be for the DishPro twin or quad tuned to 119W and 110W.

I will assume that you have your dish aligned correctly and that one RG6 cable running to the **In** post on the DreamBox.

Procedure:

1. Using the remote control press **Menu** and go to **Settings** then **Service Searching** then **Satellite Configuration** to the following screen.

Satellite Configuration

non-standard user defined configuration...

Sat/Position	LNB	22Khz	Voltage
119.0 W EchoStar 7	0	Hi/Lo	H/V
110.0 W EchoStar 6	1	Hi/Lo	H/V

save new erase

close Satellite Configuration

2. Choose **non-standard user defined configuration** from the top drop-down menu.
3. Choose your desired satellite: **119.0 W** in this example.
4. Select **LNBO** and press the **OK** button. Do not make any other changes to the **Satellite Configuration** page.
5. At this new screen, the **LOF/H** value should already be **11250** so should not need to be changed. All other items should stay at their default values.

LNB Configuration



Sat/LNB mapping: LNB 0

LOF/L: 0 9 7 5 0

LOF/H: 1 1 2 5 0

Threshold: 1 1 7 0 0

☐ increased voltage

 save  next page

here you can change your sat/lnb mapping

6. Press the **Blue** button to take you to the next page.

LNB Configuration

1 Toneburst:

2 DiSEqC Mode:

3 DiSEqC Parameter:

4 DiSEqC Repeats:

5 Uncommitted Switch:

6 ☐ Sequence repeat

7 ☐ Swap Commands

None

Version 1.2

A/A

None

None

8 ☐ Fast DiSEqC

●
prev. page

●
save

goto next page (DiSEqC)

7. **Toneburst** should be **None**.
8. The **DiSEqC Mode** should be **1.0** or **1.1**. Either will work.
9. Change the **DiSEqC Parameter** to **A/A** for LNB0.
10. **Uncommitted Switch** should be set to **None**.
11. Boxes 6-8 should be unchecked.
12. Press the **Green** button or arrow down to the **save** box and save the changes you have just made.
13. Press the **Yellow** button to add another satellite and repeat this procedure to add both satellites with the following settings:

Satellite	LNB	LOF/H	Toneburst	DiSEqC Mode	DiSEqC Parameter
119	0	11250	None	1.0	A/A
110	1	11250	None	1.0	A/B

14. Press the **Green** button or arrow down to the **save** box and save the changes you have just made on the page that lists all the satellites to complete this configuration.

You can add a third satellite by running two RG6 cables from the twin or quad DishPro LNB to two inputs of the DP34 switch and one RG6 from the DishPro 300 LNB to input 3 of the DP34. The DishPro 300 LNB will then be LNB2 with DiSEqC parameter of B/A.

E. Super Dish System

This is an elliptical dish with a DishPro twin LNB plus a linearly polarized LNB called an FSS LNB. There are two varieties. One picks up 119, 110, and 105 and the second tunes 119, 110, and 121.



The DishPro twin has an internal DiSEqC switch that works well. This DishPro twin does not have the usual logo on it.

These DishPro twins have both Right and Left polarities on the same RG6 cable by "stacking". The internal DiSEqC switch changes the signal from 119 to 110. The "stacking" requires that you use one of the DishPro Channel Lists from <http://www.dreamboxfornewbies.net>.

You can use the DP34 switch, an uncommitted Spaun SUR-220 or 420, or a 22 kHz switch to connect the two LNBs to your DreamBox.



The **DP34 switch** is a 3x4 multiswitch. It allows you to connect 3 satellites as inputs and up to 4 receivers as outputs. It only works with DishPro twins, DishPro quads, and DishPro

single LNBs. Your DishPro twin or quad will fill 2 of the inputs leaving 1 more input available for the single.

119W is always LNB0 and 110W is always LNB1.

There can only be one DiSEqC switch between the LNB and the receiver. You cannot use another DiSEqC switch with this equipment because the internal DishPro switch would make a total of two.

I will provide you with an example to demonstrate how this should be done. This example will be for the DishPro twin tuned to 119W and 110W and an FSS DishPro LNB tuned to 105W.

I will assume that you have your dish aligned correctly and that one RG6 cable running to the **In** post on the DreamBox.

Procedure:

1. Using the remote control press **Menu** and go to **Settings** then **Service Searching** then **Satellite Configuration** to the following screen.

Satellite Configuration

non-standard user defined configuration... ▼

Sat/Position	LNB	22Khz	Voltage
119.0 W EchoStar 7 ▼	0	Hi/Lo ▼	H/V ▼
110.0 W EchoStar 6 ▼	1	Hi/Lo ▼	H/V ▼
105.0 W AMC 2 ▼	2	Hi/Lo ▼	H/V ▼

●
save

●
new

●
erase

add a new Satellite

2. Choose **non-standard user defined configuration** from the top drop-down menu.
3. Choose your desired satellite: **119.0 W** in this example.
4. Select **LNBO** and press the **OK** button. Do not make any other changes to the **Satellite Configuration** page.
5. At this new screen, the **LOF/H** value should already be **11250** so should not need to be changed. All other items should stay at their default values.

LNB Configuration



Sat/LNB mapping: LNB 0

LOF/L: 0 9 7 5 0

LOF/H: 1 1 2 5 0

Threshold: 1 1 7 0 0

☐ increased voltage

 save  next page

here you can change your sat/lnb mapping

6. Press the **Blue** button to take you to the next page.

LNB Configuration

1 Toneburst:

2 DiSEqC Mode:

3 DiSEqC Parameter:

4 DiSEqC Repeats:

5 Uncommitted Switch:

6 ☐ Sequence repeat

7 ☐ Swap Commands

None ▾

Version 1.2 ▾

A/A ▾

None ▾

None ▾

8 ☐ Fast DiSEqC

●
prev. page

●
save

goto next page (DiSEqC)

7. **Toneburst** should be **None**.
8. The **DiSEqC Mode** should be **1.0** or **1.1**. Either will work.
9. Change the **DiSEqC Parameter** to **A/A** for LNB0.
10. **Uncommitted Switch** should be set to **None**.
11. Boxes 6-8 should be unchecked.
12. Press the **Green** button or arrow down to the **save** box and save the changes you have just made.
13. Press the **Yellow** button to add another satellite and repeat this procedure to add both satellites with the following settings:

Satellite	LNB	LOF/H	Toneburst	DiSEqC Mode	DiSEqC Parameter
119	0	11250	None	1.0	A/A
110	1	11250	None	1.0	A/B
105	2	10750	None	1.0	B/A

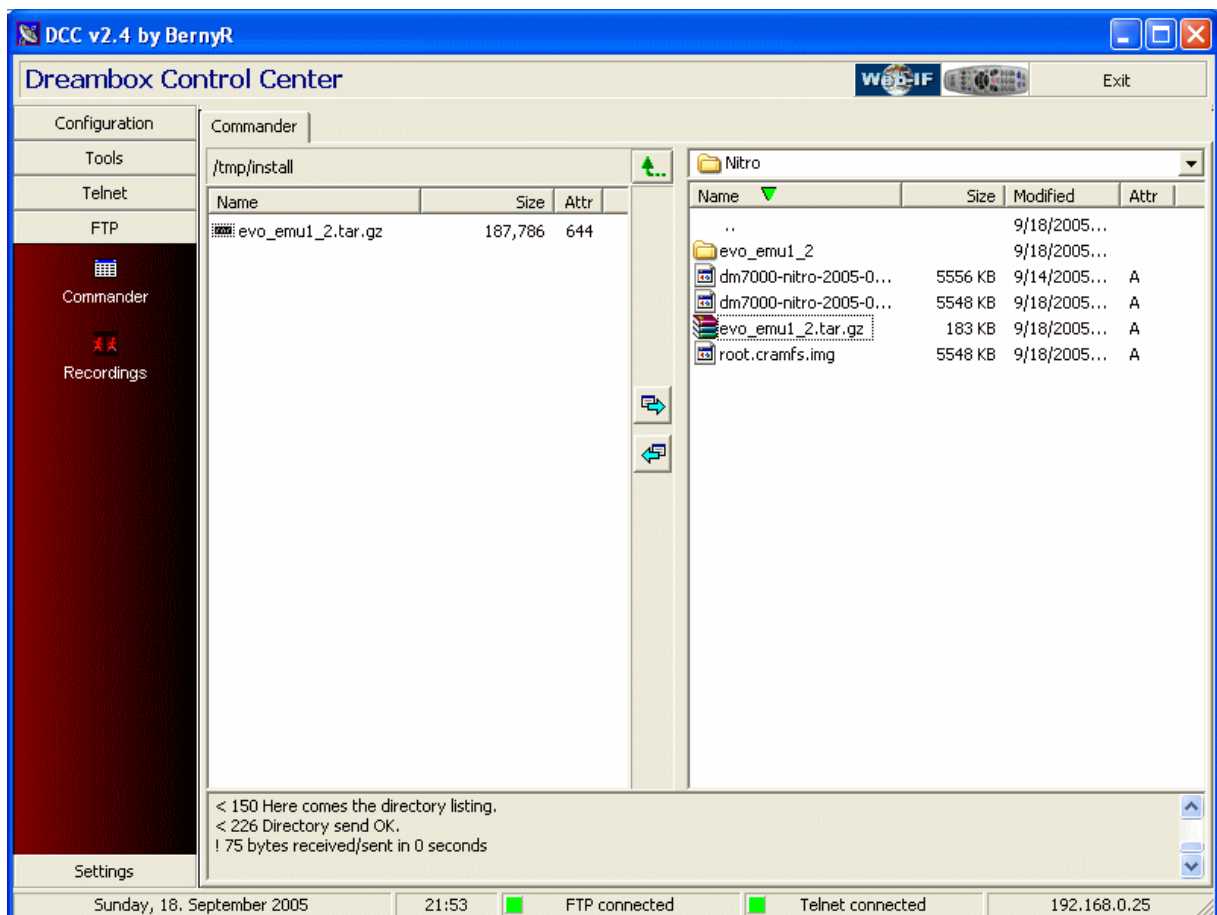
14. Press the **Green** button or arrow down to the **save** box and save the changes you have just made on the page that lists all the satellites to complete this configuration.

Installing Plugins including the EMUs

Nitro Plugins Manager

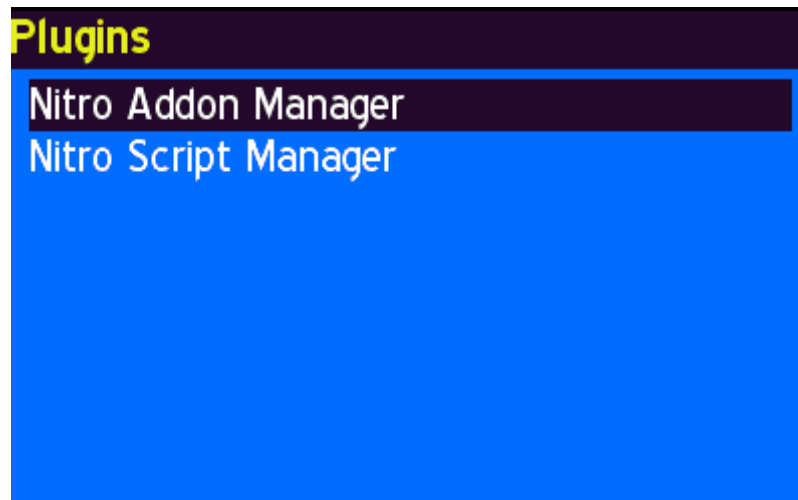
The **Nitro** image contains an automatic installer of Plugins including the Emus.

1. Use **DCC** from you PC to FTP your tarballs (xxxxx.tar.gz files) to the **/tmp/install** folder on the DreamBox. Only Nitro tarballs will work. You can install many tarballs at once; just load as many as you want to install in the **/tmp/install** folder. **Do not try Pi2 or other image tarballs as they will not work and may make your image unstable.** Make sure the file ends in tar.gz after the transfer to your DreamBox.

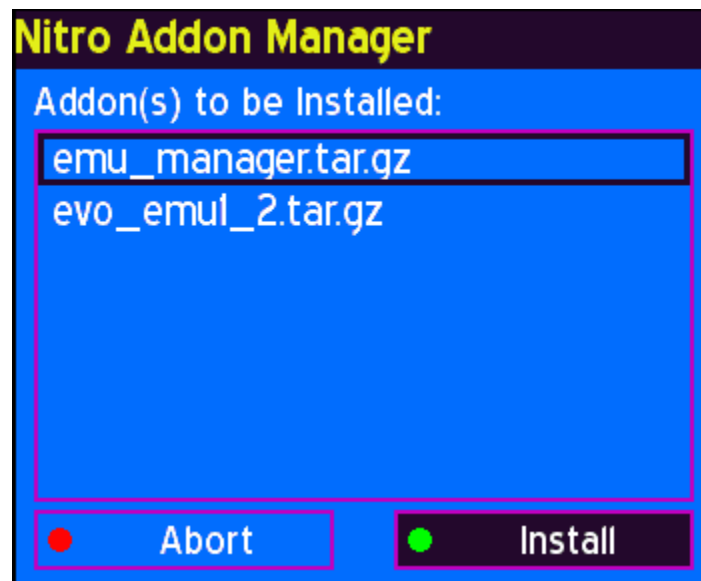


2. Use your remote to select any channel. You will not be able to select the **Plugins** screen until you have changed channels at least once.

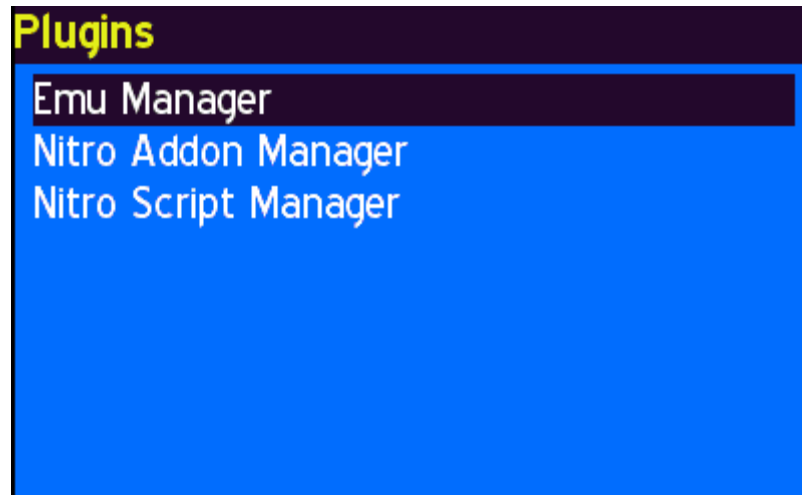
3. Press the **Blue** button for the first time and you will see this menu with your tarballs waiting to be installed:



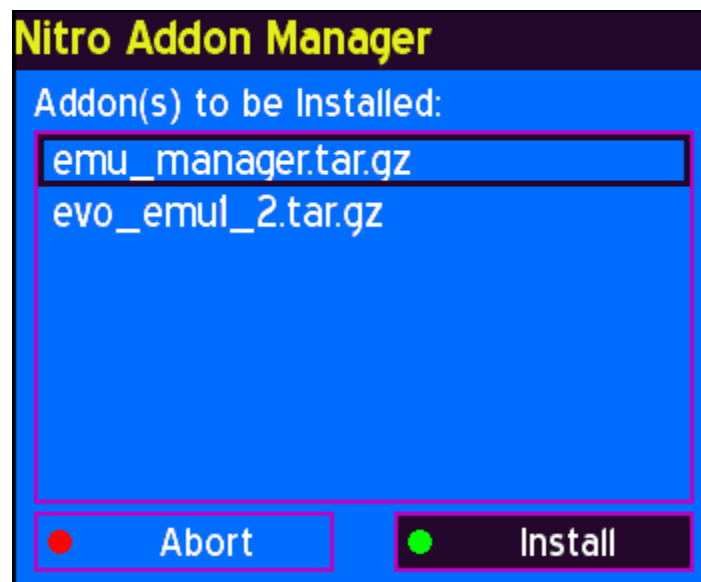
4. Select **Nitro Addon Manager** and you will see all the **Plugins** that you have uploaded to the **/tmp/install** folder on the DreamBox.



(After you install the **Emu Manager** you will see this menu first so you can choose the **Emu Manager** or the **Addon Manager**. Initially, there is only the **Addon Manager** so it will take you directly to the **Addon Manager Menu**):



5. Press the **Green** button to install all the addons at once.



Emus and Encryption

The Emu plugins allow the decryption of encrypted channels such as DISH Network and Bell ExpressVu. These two use Nagra 2 encryption technology.

Commonly used Emu plugins are:

- Evocamd N2
- MGcamd N2
- Radegast
- Newcamd
- SCAM
- CAMD3
- CAMX

Keys are never included with an image or Emu. The key requirements are based on the Emu and not on the image. They are different for different Emus.

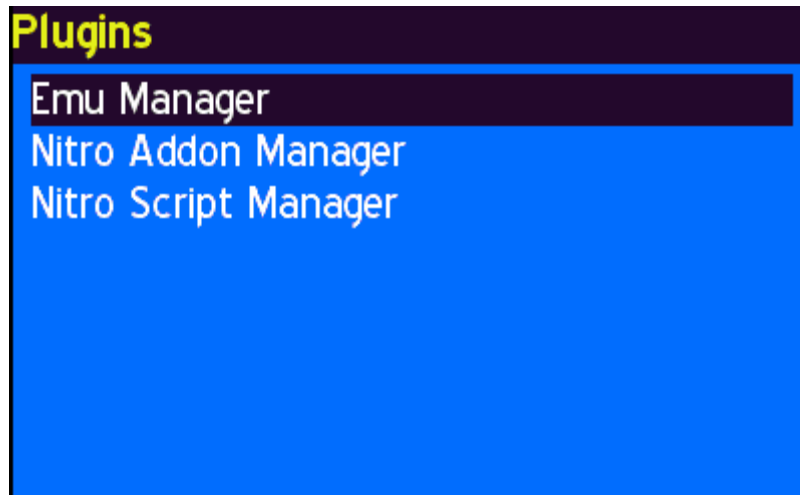
Radegast and **MGcamd** use only **SoftCam.Key** and **AutoRoll.Key**.

Evocamd uses two files in the **/var/keys** folder and 13 files in the **/var/scce** folder.

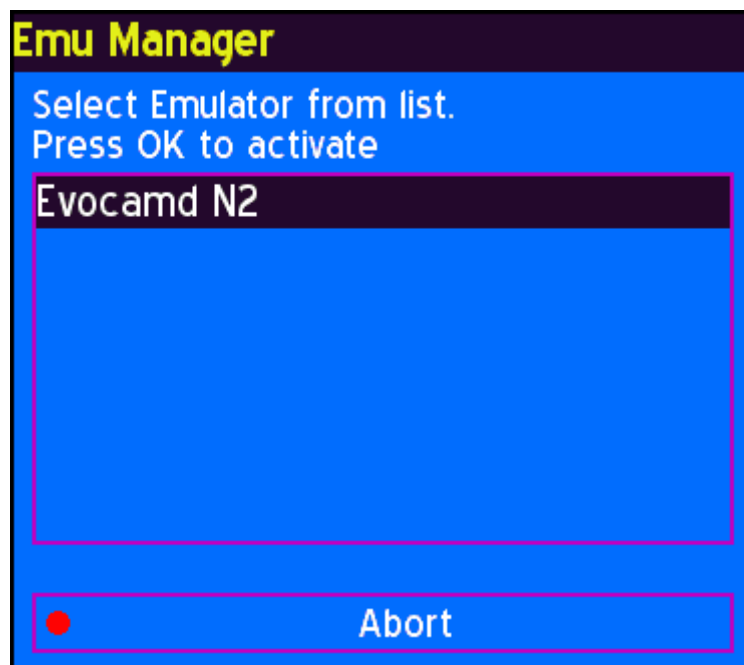
Newcamd uses 13 files in the **/var/tuxbox/scce** folder not **/var/scce** and none in the **/var/keys** folder.

You must select the Emu while in the TV mode trying to watch a channel if using the **Nitro** images.

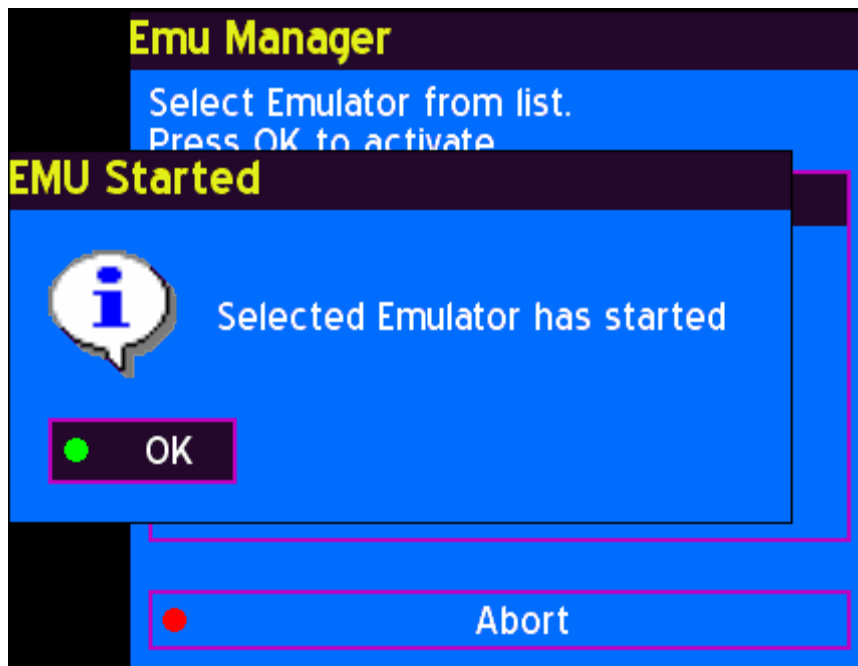
1. Press the **Blue** button to select the Plugins Menu.



2. Highlight the Emu Manager and press the OK button.



3. Select the Emu of your choice and press the **OK** button to activate it. This selects your Emu for every channel in your Service List.



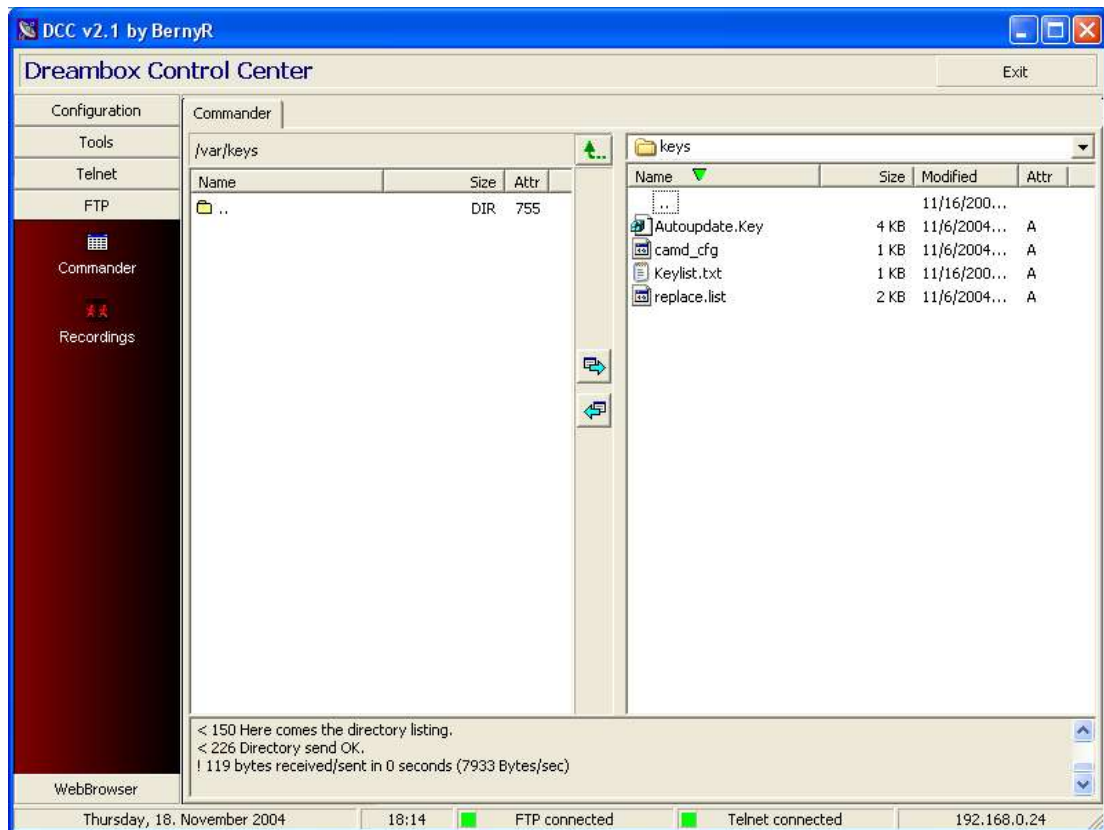
Section 10

Using DCC to Load Keys

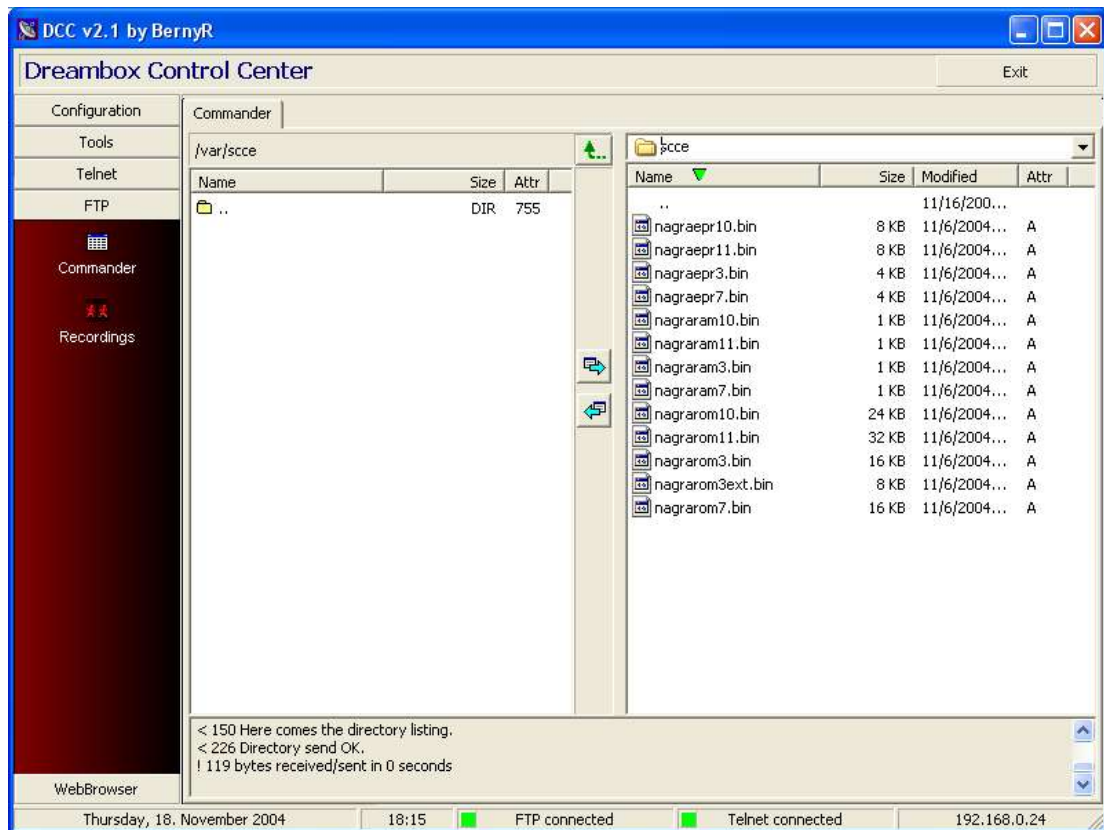
This step may be unnecessary. Many tarballs (xxx.tar.gz) found on the Internet contain the keys already.

A. Procedure for adding keys to images using **Evocamd**:

1. Download **Autoupdate.Key**, **Keylist.txt**.
2. Start **DCC**.
3. Click the FTP tab at the left.
4. Browse through the right side pane until you find the two key files in your recent download.
5. Double click on **var** on the left side and then double click on **keys** to open **/var/keys**.



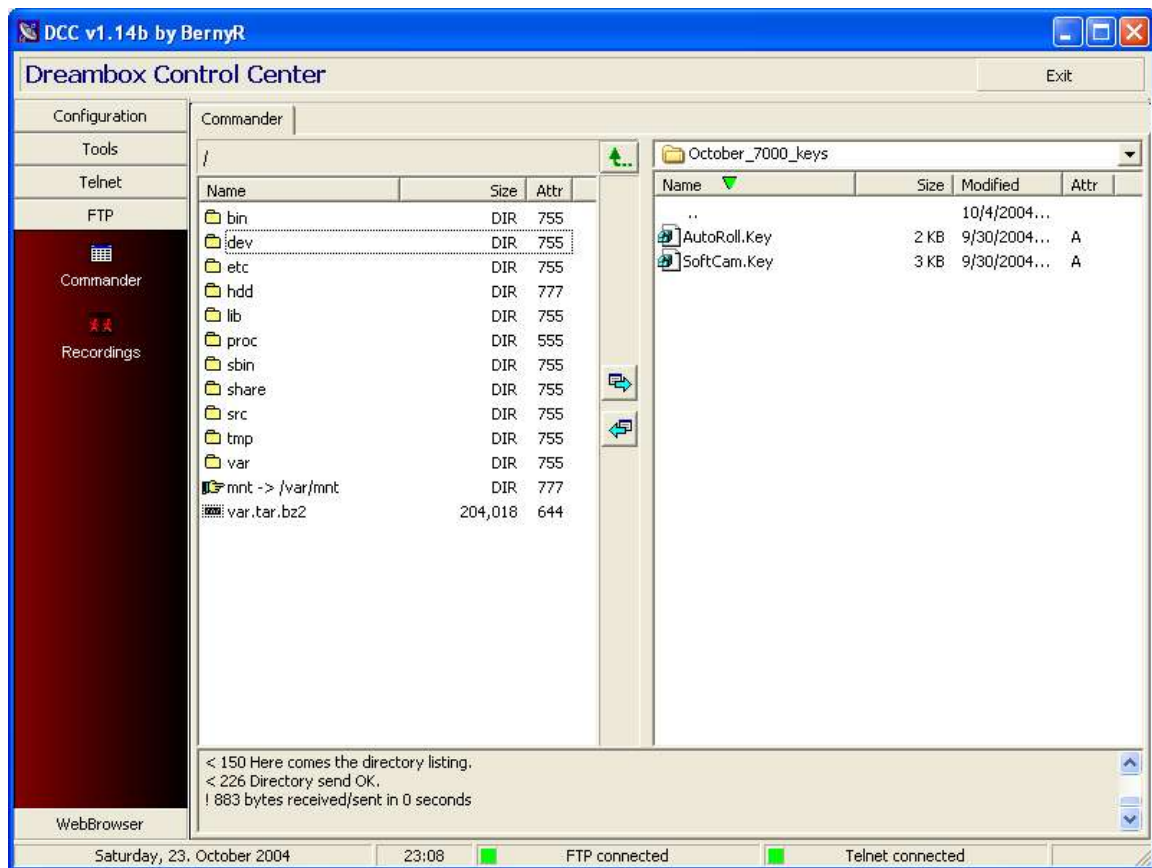
6. Highlight one of these three files and click the leftward pointing arrow between the DreamBox and the PC pane to send the file to the DreamBox. **BE SURE TO OVERWRITE.**
7. Repeat with the other files.
8. Make sure the capitalization is correct; it does matter.
9. Then press the upward pointing green arrow located at the top of the area between the left and right panes. This will take you up one file hierarchy to **/var**. Now double click on **scce** to open **/var/scce**.
10. Find the 13 **nagra ROM files** from your download on your PC in the right pane of your **DCC**.



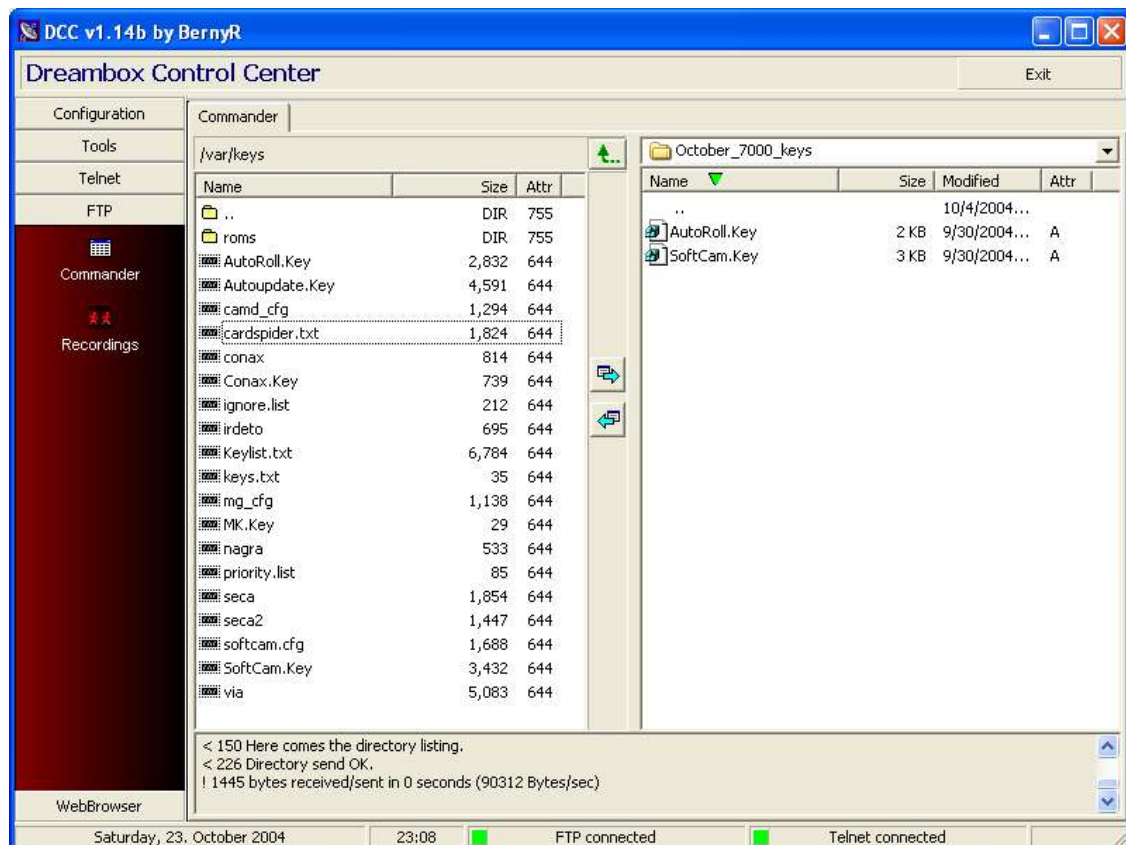
11. Highlight one of these three files and click the leftward pointing arrow between the DreamBox and the PC pane to send the file to the DreamBox.
12. Repeat with the other files.
13. Make sure the capitalization is correct; it does matter.

B. Procedure for adding keys to images using **MGcamd** and **Radegast**:

1. Download **SoftCam.Key** and **AutoRoll.Key**.
2. Start **DCC**.
3. Click the FTP tab at the left.
4. Browse through the right side pane until you find the two key files.



5. Double click on **var** on the left side and then double click on **keys** to open **/var/keys**.



6. Highlight one of the **.Key** files and click the leftward pointing arrow between the DreamBox and the PC pane to send the file to the DreamBox.
7. Repeat with the other file.
8. Make sure the capitalization is correct; it does matter.
(**SoftCam.Key** and **AutoRoll.Key**)

Section 11

Configuring Network Drives

Network Drives, hard drives on any PC on your network, can be recorded to from the DreamBox. There are two protocols, NFS and CIFS. CIFS clearly works better on a DreamBox 500. NFS and CIFS work great on the 7000 and 7020. Either protocol will allow you to record movies on any drive that you configure on your network. There is no need to install a hard drive in your DreamBox if you use this technique.

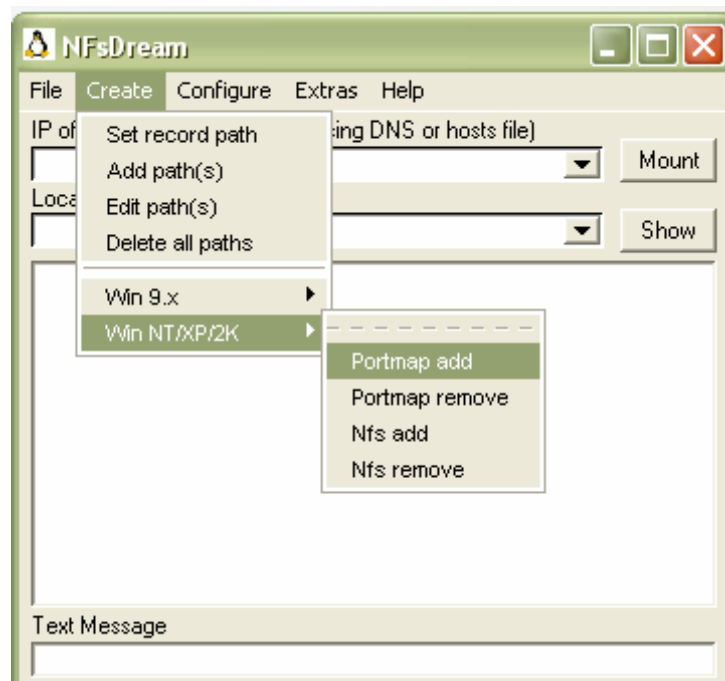
NFS Drive Configuration

Software needed:

1. NFSDream 1.05 to make the NFS install easier. You can do it manually.
2. TrueGrid NFS 1.1

Tip:

- If you make a mistake installing NFS you will need to **Delete all paths**, **Portmap remove**, and **NFS remove**. You will need to delete any files in the **etc** folder that you make in the Windows root directory and delete the **Movie** folder that was made on your target drive. Reboot your computer and start over with the directions below.



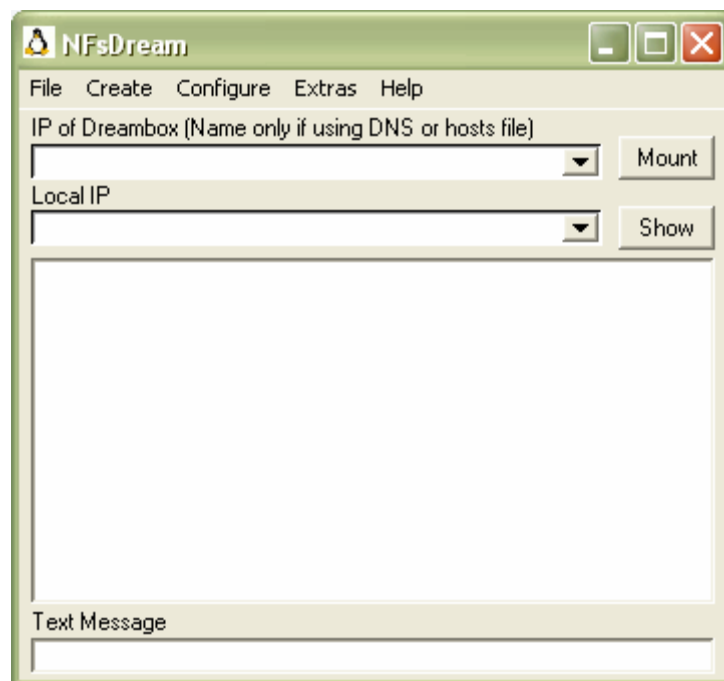
A. Configuring Your PC

1. Download **NFSDream** and **TrueGrid NFS 1.1**. It can be found on our forum as well as other places.
2. Extract the **NFSDream** file to a folder.
3. Create a new folder within the folder you extracted the **NFSDream** file to called **nfs**.
4. Extract the **TrueGrid NFS** server files to the folder you created called **nfs**.

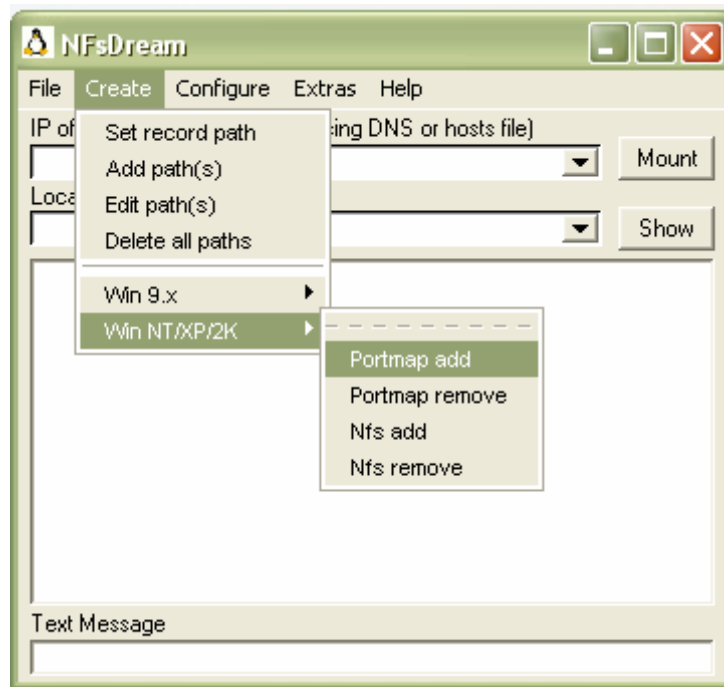
Example:



5. Create a folder in your **Systemroot** directory called **etc**. Your **Systemroot** directory is where you have installed your operating system, for example, Windows or Winnt. (**NFSDream** will use this folder to copy two files, **exports** and **rpc**, later on in the process.)
 - a. You can do this easily by opening a Command (DOS) prompt and typing the following:
 1. 'cd %systemroot%'
 2. 'md etc'
 - b. Or you can use regular Windows commands to make this new folder.
6. Start **NFSDream** by double clicking on the **NFSDream** icon and you will see this screen.



7. Select **Create** then **Win NT/XP/2K** then **Portmap Add** and then **Create** again, then **Win NT/XP/2K** and finally **Nfs Add**.



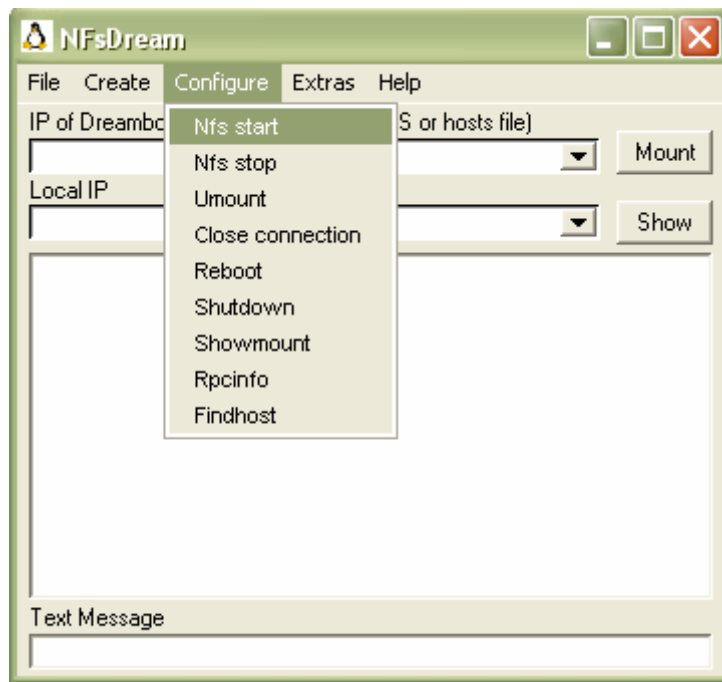
8. **Create** then **Set record path** and browse to the drive and folder where you plan to mount the NFS Drive.

When you do this, you are telling the NFS server to publish a share called **/dreambox** which is actually pointing to the folder you selected.

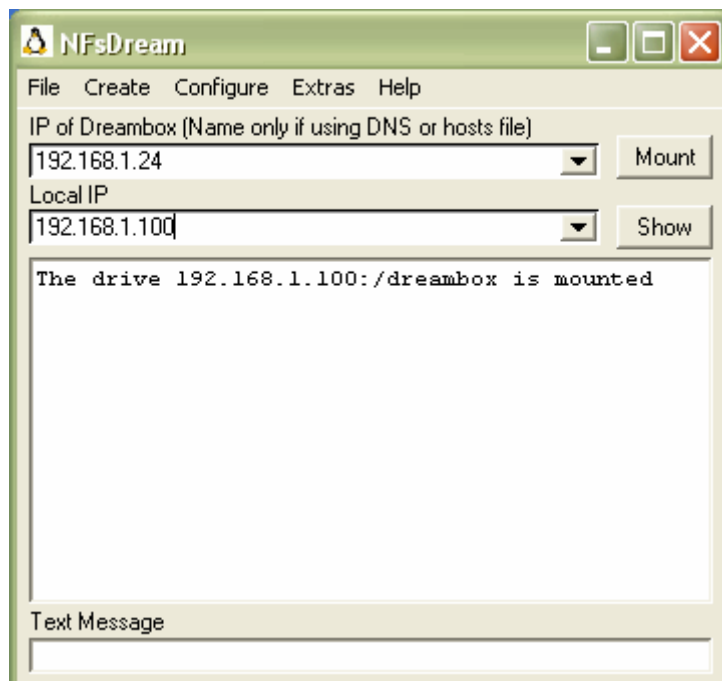
You will also notice there is a new folder within the location you chose called **movie**. This is where all recordings will be stored. Do not delete this folder.



9. Select **Configure** and then **Nfs start**. Don't worry if you see the message **nfs service is (already) started**. This is normal.



10. In the top line box, labeled **IP of DreamBox** enter the IP address of your DreamBox.
11. In the next line box down, enter the IP address of the machine where **NFSDream** is installed.



12. Once both fields have been populated, press the **Mount** button.

B. Configuring your DreamBox

1. Press **MENU** on the remote and go to Settings then down to **Expert Setup** and then to **Communication Setup**. Press the **Blue** button on the remote to select **mounts**.
2. Enter the following information:
 - a. The IP of the PC housing the NFS drive in the **IP:** box.
 - b. Make sure **NFS** is showing in the drop down box.
 - c. **dreambox** in the **Dir:** box.
 - d. **/hdd** in the **LocalDir:** box
 - e. Leave **rw** in the **Options:** box.
 - f. Don't change the value in the **Extra** box.
 - g. Make sure **Automount** is checked.

NFS/CIFS Setup (1/4)

IP: 192 .168 .0 .5 NFS ▾

Dir: dreambox

LocalDir: /hdd

Options: rw ▾

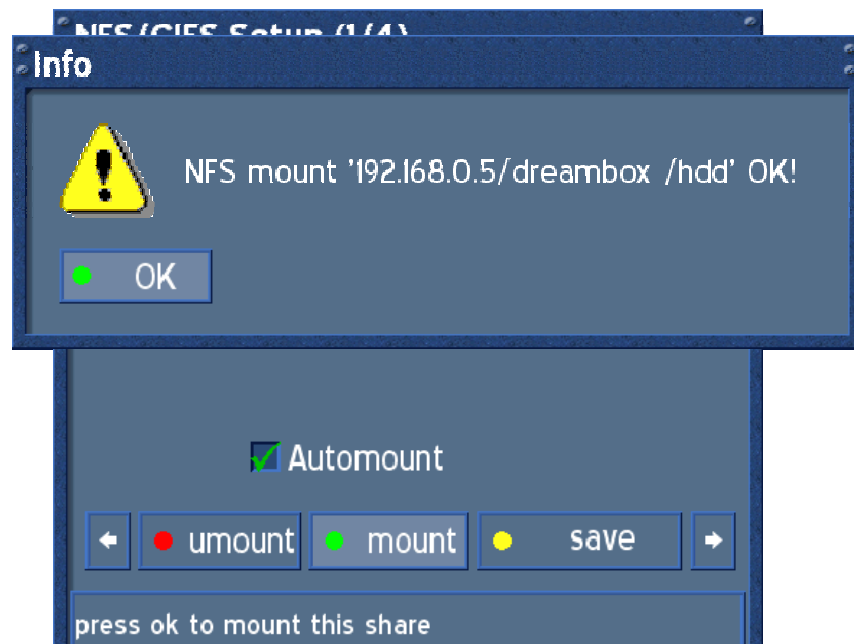
Extra: nolock,rsize=8192,wsize=8192

☒ Automount

← ● umount ● mount ● save →

press ok to mount this share

h. Press the **Green** button on the remote to mount the drive.



i. Press the **Yellow** button to save the mount.

CIFS Drive Configuration

I. Configuring Your PC

There are different instructions for [Windows XP Pro](#) and [Windows XP Home Edition](#).

A. Configuring Your Windows XP Pro PC

1. Right click on **My Computer** then left click on **Manage**.
2. Open **Local Users and Groups** by left clicking on the + beside that selection.
3. Right click on **Users** folder and select **New User**.
4. Enter **dream** in the **User name** and **Full name** boxes.

5. Enter **dream** in the **Password** and **Confirm password** boxes.
6. Uncheck **User must change password at next logon** and check **Password never expires**.
7. Left click **Create**.
8. Disable the **Simple File Sharing Mode** if your XP Pro is setup on a **Workgroup** instead of a **Domain** by going to **Control Panel** and double left clicking on **Folder Options**.
9. Click on the **View** tab at the top and scroll down to the bottom to uncheck **Use simple file sharing (Recommended)**.
10. Click the **Apply** and **OK** buttons to save this change then close all of the windows you opened.
11. Create folder called **Dreambox** with a subfolder called **movie** by double clicking on **My Computer** then double clicking the **drive** on which you plan to save recordings. Right click anywhere within that window and move the cursor over **New** then left click on **Folder**. Replace **New Folder** with **Dreambox** as the folder name. Double click on **Dreambox** and repeat to create a **movie** folder within **Dreambox**.
12. Right click on the **Dreambox** folder and select **Sharing and Security**. Check the **Share this folder** button.
13. Click the **Apply** and **OK** buttons to save this change then close all of the windows you opened.
14. Left click the **Permissions** button and click the **Add** button making sure that the name of your PC shows up in the **From this location** field. Click **Locations** and enter your **PC** if it did not show up initially.
15. Just beneath the **Locations** box is a box with the directions: **Enter the objects names to select**. Enter the account name that you created above which is **dream**. Left click **OK** to save.
16. Give **Full Control**, **Change**, and **Read** permissions to **dream** by checking these labels.
17. Proceed to [Configuring Your DreamBox](#).

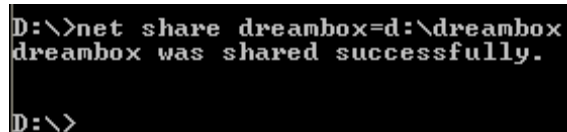
B. Configuring Your Windows XP Home Edition PC

Shares and permissions are best done through the command line level in Windows XP Home. You will also use the CACLS.EXE utility in this guide. This utility comes with XP Home and is used for changing the Access Control Lists (ACLs) used by Windows to keep track of user permissions and security levels.

1. Open the **Control Panel** and double left click on **Add Users**.
2. Left click on **Add new user**.
3. Enter **dream** in the **User name** and **Full name** boxes.
4. Enter **dream** in the **Password** and **Confirm password** boxes.
5. Uncheck **User must change password at next logon** and check **Password never expires**.
6. Left click **Create**.
7. Create folder called **Dreambox** with a subfolder called **movie** by double clicking on **My Computer** then double clicking the **drive** on which you plan to save recordings. Right click anywhere within that window and move the cursor over **New** then left click on **Folder**. Replace **New Folder** with **Dreambox** as the folder name. Double click on **Dreambox** and repeat to create a **movie** folder within **Dreambox**.
8. Windows XP Home will not easily allow you to disable **Simple File Sharing Mode** so this will have to be done on the **Command Line** level.
9. Type the following at a command prompt to share a folder named **Dreambox** on **hard drive d** :

Net Share dreambox=d:\Dreambox

Press **Enter** and success will be confirmed by the following response.



```
D:\>net share dreambox=d:\dreambox
dreambox was shared successfully.

D:\>
```

10. NTFS permissions must be granted by using the command line tool **CACLS**. Type the following at a

command prompt to grant full permissions to a user **dream** over a folder named **Dreambox** on **hard drive d** :

```
caccls D:\Dreambox /E /G dream:F
```

Press **Enter** and success will be confirmed by the following response.

```
P:\>caccls D:\Dreambox /E /G dream:F
processed dir: D:\DreamBox
```

11. Proceed to [Configuring Your DreamBox](#).

II. Configuring your DreamBox

4. Press **MENU** on the remote and go to Settings then down to **Expert Setup** and then to **Communication Setup**. Press the **Blue** button on the remote to select **mounts**.
5. Enter the following information:
 - b. The IP of the PC housing the NFS drive in the **IP:** box.
 - c. Make sure **CIFS** is showing in the drop down box.
 - d. **dreambox** in the **Dir:** box.
 - e. **/hdd** in the **LocalDir:** box.
 - f. Leave **rw** in the **Options:** box.
 - g. Don't change the value in the **Extra:** box.
 - h. **dream** in the **User:** box.
 - i. **dream** in the **Pass:** box.
 - j. Make sure **Automount** is checked.

NFS/CIFS Setup (1/8)

IP: 192 .168 .1 .5 CIFS ▼

Dir: dreambox

LocalDir: /hdd

Options: ▼

Extra: nolock,rsiz=8192,wsiz=8192

User: dream

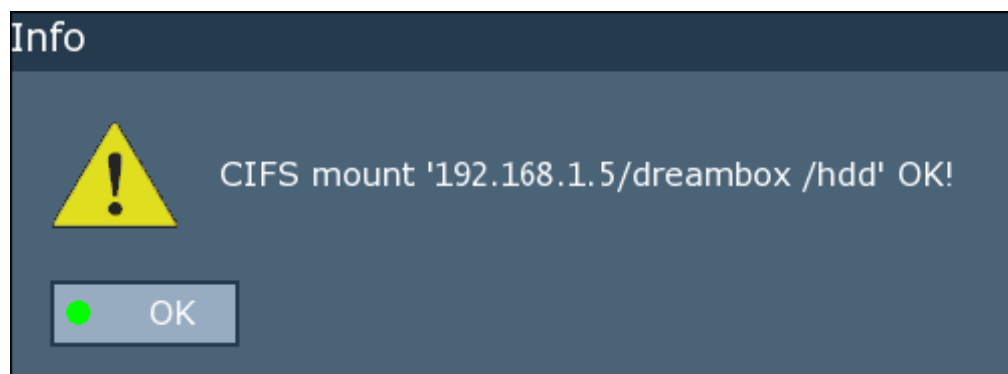
Pass: dream

☒ Automount

< ● umount ● mount ● save >

press ok to edit password

6. Press the **Green** button on the remote to mount the drive.



7. Press the **Yellow** button to save the mount.

Section 12

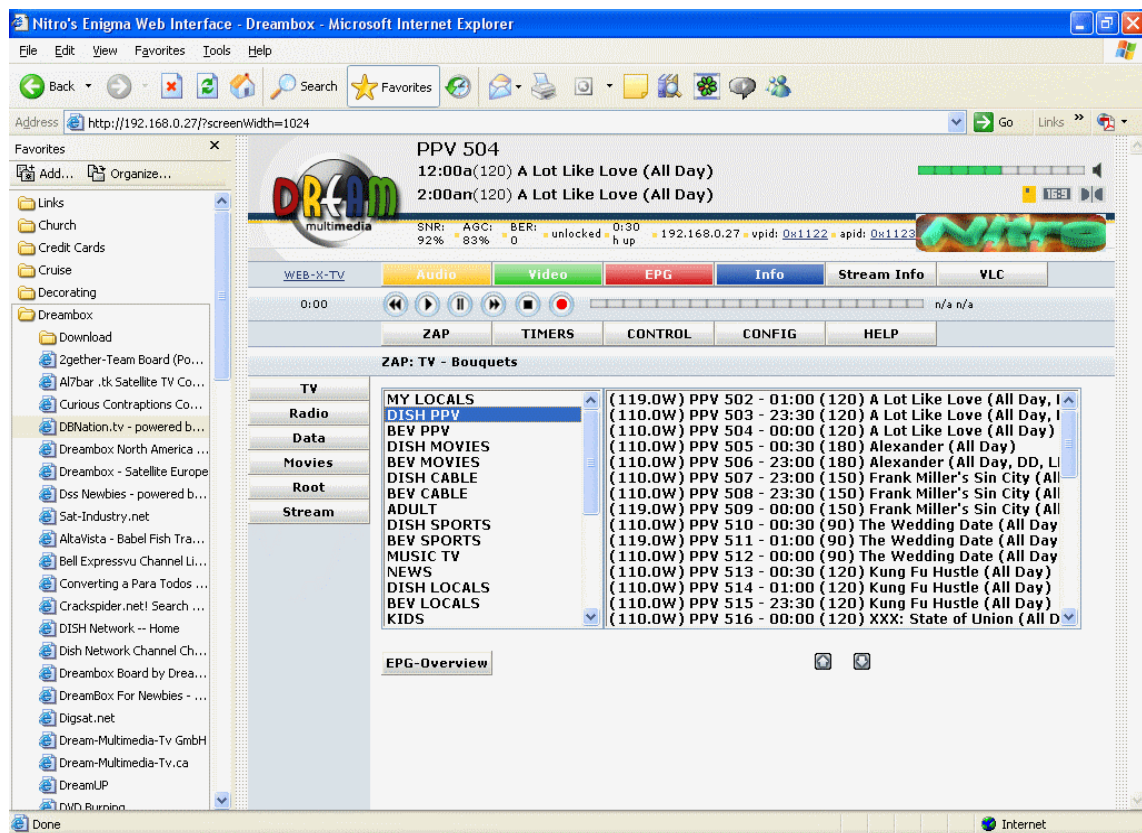
PVR – Recording and Playback

Recording

Recording can now be done with the remote or with the Web Interface page.

Web Interface

8. Start your **web browser** or the **webif** in **DCC** to access the record function. You have already configured DCC with your correct IP address. Enter your DreamBox **IP** in the format of <http://192.168.0.24> in the **Address** box if you want to use your **web browser** in place of **DCC**.



9. Press the **Record** button at the upper right of the Web Interface and you will see that a flashing red dot appears and that the **Record** button changes to a **Stop** button.
10. Press the **Stop** button to end the recording.

Remote

- a. Tune the channel of choice and press the **Green** button to bring up the PVR function screen.
- b. The **> button** is the **Record** button.

The **< button** is the **Stop** button.

Red is Rewind.

Green is Play.

Yellow is Pause.

Blue is Fast forward.

Playback

1. Press **MENU** on the remote and then browse over to **File mode**.
2. Highlight **recorded movies** and press **OK**.
3. Scroll down and highlight the recording of interest and press **OK**.

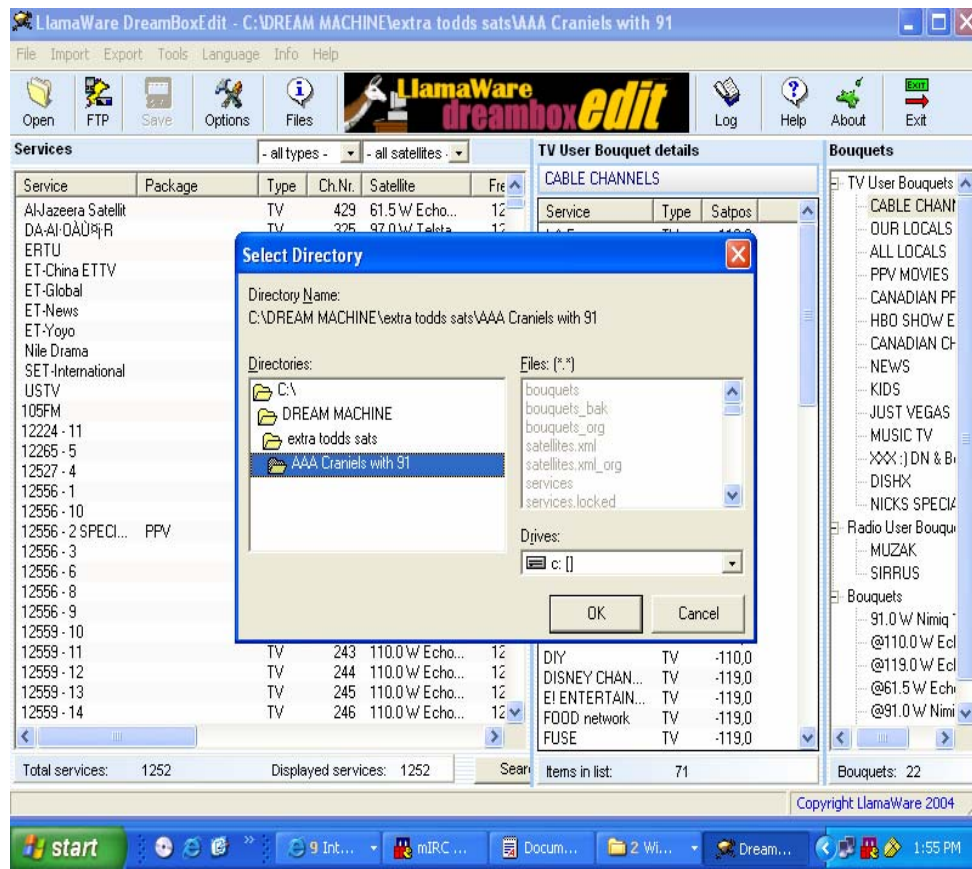
Section 13

Adding Services Manually

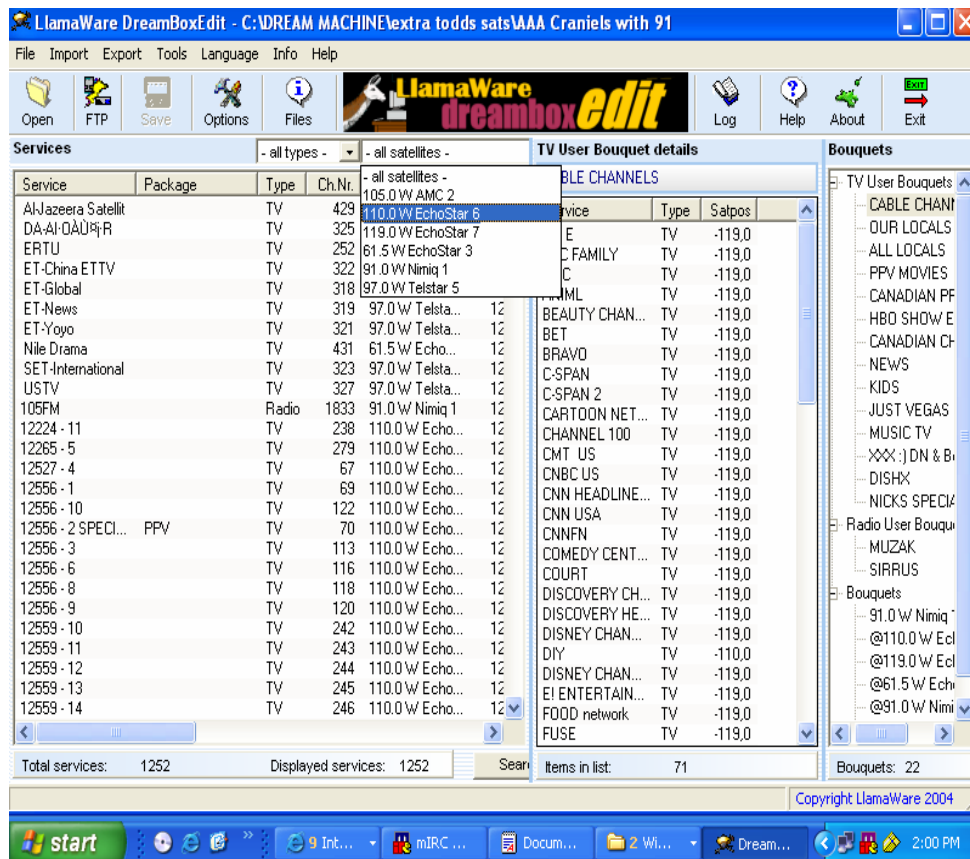
Procedure:

1. Start **DreamBoxEdit** and open your **Service List**. (This is the file with all your satellite information, such as

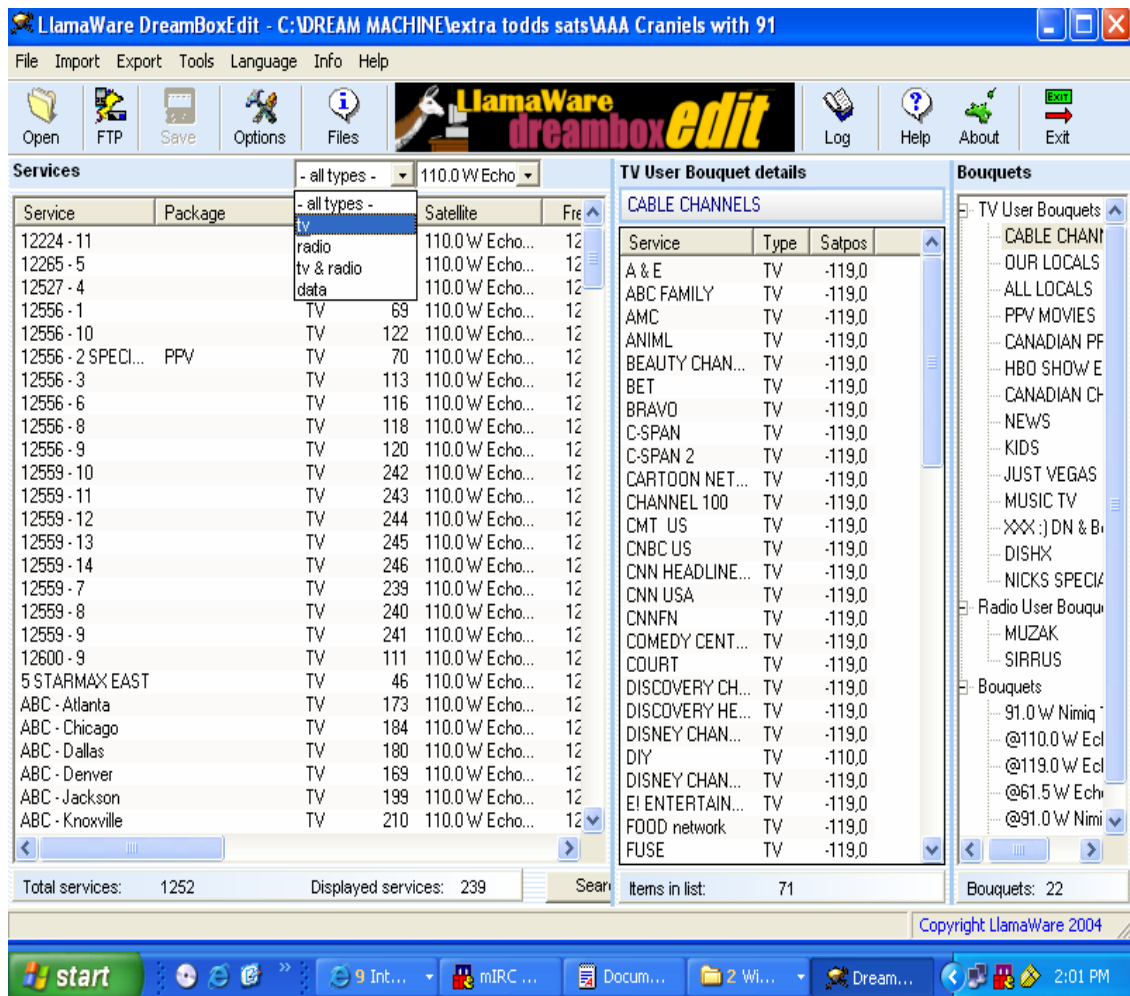
satellites.xml, bouquets, etc.)



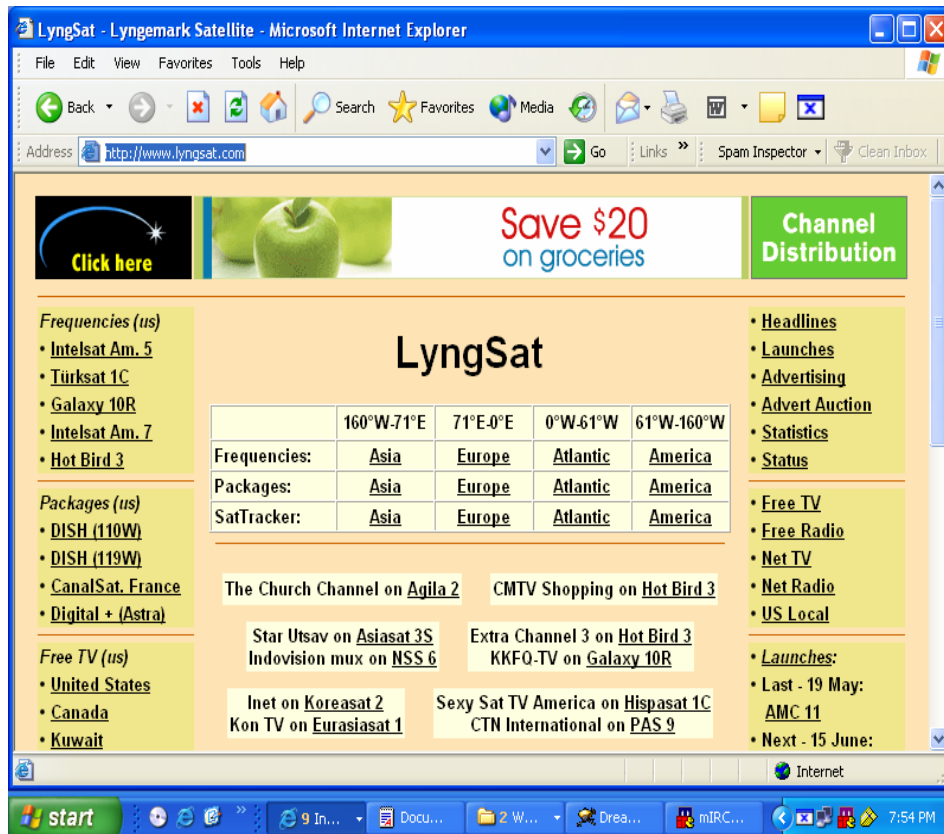
2. Choose the satellite of interest from the **satellites** drop-down menu.



- Choose **tv** from the **types** drop-down menu to make things easier to keep track of. (Select **radio** if you want to add radio stations.)



- Go to <http://www.lyngsat.com> to find the service information you need to tune a service. These pages contain **packages** or information about the services offered on each transponder of each satellite.











5. We are adding services from 110W so select Packages – America and click on 110.0 W EchoStar 6/8.

61.5°W	EchoStar 3	DISH Network	Freq.	SID		040503
61.5°W	EchoStar 3	Sky Angel	Freq.	SID		040310
61.5°W	Rainbow 1	Voorn			ChNo	040603
70.0°W	Brasilsat B1	Globosat	Freq.	SID		030723
71.8°W	Nahuel 1	TDH - TV Directa al Hogar	Freq.		ChNo	040130
82.0°W	Nimiq 2	ExpressVu	Freq.	SID		040608
85.0°W	XM Roll	XM Radio			ChNo	
91.0°W	Nimiq 1	ExpressVu	Freq.	SID		040529
95.0°W	Galaxy 3C	DirectTV Latin America			ChNo	040604
95.0°W	Galaxy 3C	DirectTV Brazil			ChNo	040605
99.0°W	Galaxy 4R	HITS	Freq.	VC		040310
101.0°W	DirectTV 1R/2/4S	DirectTV USA			ChNo	040606
103.0°W	AMC 1	In Demand	Freq.	VC		030929
105.0°W	AMC 2	DISH Network	Freq.	SID		040608
107.3°W	Anik F1	Star Choice	Freq.	VC	ChNo	040505
109.8°W	DirectTV 6	DirectTV USA			ChNo	040122
110.0°W	EchoStar 6/8	DISH Network	Freq.	SID		040531
111.1°W	Anik E2R	Star Choice	Freq.	VC	ChNo	030619
115.0°W	XM Rock	XM Radio			ChNo	
116.8°W	SatMex 5	PCTV	Freq.	VC		040403
119.0°W	DirectTV 7S	DirectTV USA			ChNo	040607
119.0°W	EchoStar 7	DISH Network	Freq.	SID		040528
121.0°W	EchoStar 9	DISH Network	Freq.	SID		040606
123.0°W	Galaxy 10R	TVN Digital Entertainment	Freq.	VC		040520
129.0°W	Intelsat Americas 7	In Demand	Freq.	VC		030731
129.0°W	Intelsat Americas 7	OlympuSat	Freq.	VC		040406
148.0°W	EchoStar 1/2	DISH Network	Freq.	SID		040531
157.0°W	EchoStar 4	DISH Network	Freq.	SID		040519





6. You will now see this screen:

DirecTV 6 & EchoStar 6/8 @ Lyngemark Satellite, last updated 2004-06-08 - <http://www.lyngsat.com/110west.html>

Freq. Tp	Provider Name Channel Name	Video Encryption	SR - FEC SID - VPID	NID - TID Audio	Beam	Source Updated
12224 R tp 1	 DISH Network	A U P	DVB Nagravision 1 Nagravision 2	20000 - 5/6	4102-201	Conus J Hotsenpiller 040311
	DISH 500	A		9900 6690	6691 E	
12239 L tp 2	 DISH Network	A P	DVB Nagravision 1 Nagravision 2	20000 - 5/6	4102-272	Central Florida J Hotsenpiller 040402
12239 L tp 2	 DISH Network	A P	DVB Nagravision 1 Nagravision 2	20000 - 5/6	4102-262	Ohio J Hotsenpiller 040401
12239 L tp 2	 DISH Network	A P	DVB Nagravision 1 Nagravision 2	20000 - 5/6	4102-252	Northern Plains J Hotsenpiller 040323
12239 L tp 2	 DISH Network	A P	DVB Nagravision 1 Nagravision 2	20000 - 5/6	4102-282	Texas J Hotsenpiller 040423
12239 L tp 2	 DISH Network	A P	DVB Nagravision 1 Nagravision 2	20000 - 5/6	4102-242	South California S Noll 031203
12253 R tp 3	 DISH Network	A U P	DVB Nagravision 1 Nagravision 2	20000 - 5/6	4102-203	Conus J Hotsenpiller 040117
12268 L tp 4	 DISH Network	A P	DVB Nagravision 1 Nagravision 2	20000 - 5/6	4102-264	Northeast J Hotsenpiller 040528

Internet

- Now you click on any of the "P"s for programs offered. This will bring up a list on the 110W DISH Network for all services offered.

Freq. Tp	Channel Name	Enc. system	SID	VPID	APID	Beam	Source Updated
12224 R tp 1 SR 20000 FEC 5/6	 The History Channel International	A	Nagravision 1 Nagravision 2	121	4130	4131 E	J Hotsenpiller 030312
	 Mystery East	A	Nagravision 1 Nagravision 2	344	4642	4643 E	J Hotsenpiller 000331
	 True Stories East	A	Nagravision 1 Nagravision 2	345	4898	4899 E	J Hotsenpiller 000331
	 Love Stories East	A	Nagravision 1 Nagravision 2	346	4386	4387 E	J Hotsenpiller 000331
	 WAM! East	A	Nagravision 1 Nagravision 2	347	5154	5155 E	J Hotsenpiller 000331
	 Univisión Oeste	A	Nagravision 1 Nagravision 2	828	5410	5411 Sp	J Hotsenpiller 030522
	 TeleFutura Este	A	Nagravision 1 Nagravision 2	830	5666	5667 Sp	J Hotsenpiller 030522
	 TeleFutura Oeste	A	Nagravision 1 Nagravision 2	831	5922	5923 Sp	J Hotsenpiller 030522
	 De Pelicula USA	A	Nagravision 1 Nagravision 2	862	6178	6179 Sp	J Hotsenpiller 030522
	 De Pelicula Clásico	A	Nagravision 1 Nagravision 2	863	6434	6435 Sp	J Hotsenpiller 030522
	 DISH 500	A	F	9900	6690	6691 E	J Hotsenpiller 040211
	 WTOG-TV (UPN - Tampa)	A	Nagravision 1 Nagravision 2	8695		E	M2 021015
	 WEDU-TV (PBS - Tampa)	A	Nagravision 1 Nagravision 2	8696		E	M2 021015

8. The 110W satellite carries two types of beams- direct Spot beams indicated by a named location and Conus beams. "Conus" is just simply satellite info that is transmitted all over North America and "Spot" beams are transmitted over the geographical location noted. (Think of a spot as a beam from a flashlight; it just shines over a small area where you point it.)

9. As an example, let's add services from the Southern California Spot beam; the procedure is the same for Conus.

So scroll down until you see Southern California.

12239 L tp 2 SR 20000 FEC 5/6		KBAK-TV (CBS - Bakersfield)		Nagravision 1 Nagravision 2	7301	6178	6179 E	P Smith 031026
		KGET-TV (NBC - Bakersfield)		Nagravision 1 Nagravision 2	7302	6434	6435 E	P Smith 031026
		KBFX-LP (FOX - Bakersfield)		Nagravision 1 Nagravision 2	7303	6690	6691 E	S Noll 031203
		KUIV-TV (UPN - Bakersfield)		Nagravision 1 Nagravision 2	7305	6946	6947 E	P Smith 031026
		KTNV-TV (ABC - Las Vegas)	A	Nagravision 1 Nagravision 2	9030	4130	4131 E	P Smith 031018
		KLAS-TV (CBS - Las Vegas)	A	Nagravision 1 Nagravision 2	9031	4386	4387 E	P Smith 031018
		KVVU-TV (FOX - Las Vegas)	A	Nagravision 1 Nagravision 2	9033	4898	4899 E	P Smith 031018
		KVVU-TV (WB - Las Vegas)	A	Nagravision 1 Nagravision 2	9034	5154	5155 E	P Smith 031018
		KLTV-TV (PBS - Las Vegas)	A	Nagravision 1 Nagravision 2	9036	5410	5411 E	P Smith 031018
		KFBI-TV (Las Vegas)	A	Nagravision 1 Nagravision 2	9039	5666	5667 E	P Smith 031018
		Auction TV		Nagravision 1 Nagravision 2	217	6434	6435 E	J Hotsenpiller 040117
		DISH-on-Demand PPV	A	Nagravision 1 Nagravision 2	525	4130	4131 E	J Hotsenpiller 021220
		DISH-on-Demand PPV	A	Nagravision 1 Nagravision 2	526	4386	4387 E	J Hotsenpiller 021215
		DISH-on-Demand PPV	A	Nagravision 1 Nagravision 2	527	4642	4643 E	J Hotsenpiller 021215

10. We need the following information about our service:

- The station name.
- TID – transponder ID
- Frequency of the transponder
- Symbolrate
- FEC
- Polarization
- SID – Signal Identification Number
- NID – Network Identification Number

11. Lets add **KGET TV** in Bakersfield, a NBC station, as our service.

- The **station name** is NBC KGET-TV BAKERSFIELD.
- The **TID** we need is NOT the one on the left hand side of the list. The TID is 242 NOT 2. I will explain later.
- The **Frequency** of the transponder is on the left hand side of the list followed by a L. In this case the









frequency is 12239.

- d. The **Symbolrate** is on the left hand side of the list, in this case the number is 20000.
 - e. The **FEC number** is on the left hand side of the list. In this example the number is 5/6.
 - f. The **Polarization** is on the left hand side of the list, right next to the frequency number, either an **R** or **L** in this case its **L**.
 - g. The **SID** is in this list to the type of encryption. This **SID** is 7302.
 - h. The **NID** is 4102 for satellite 110W.
- The **TID** for Spot Beams is found on the page prior to the page that shows Station Names. Look at Frequency 12239 with the Spot of Southern California on this page again. The circled values give us our **NID** (Network ID) and our true **TID**.
 - Your **EPG** (Electronic Program Guide) will not work if you don't have these correct values.
 - The **NID** stays the same for the entire satellite. You can get the values here or on a list in our forum.

DirectTV 6 & EchoStar 6/8 at 110.0°W - LyngSat - Microsoft Internet Explorer

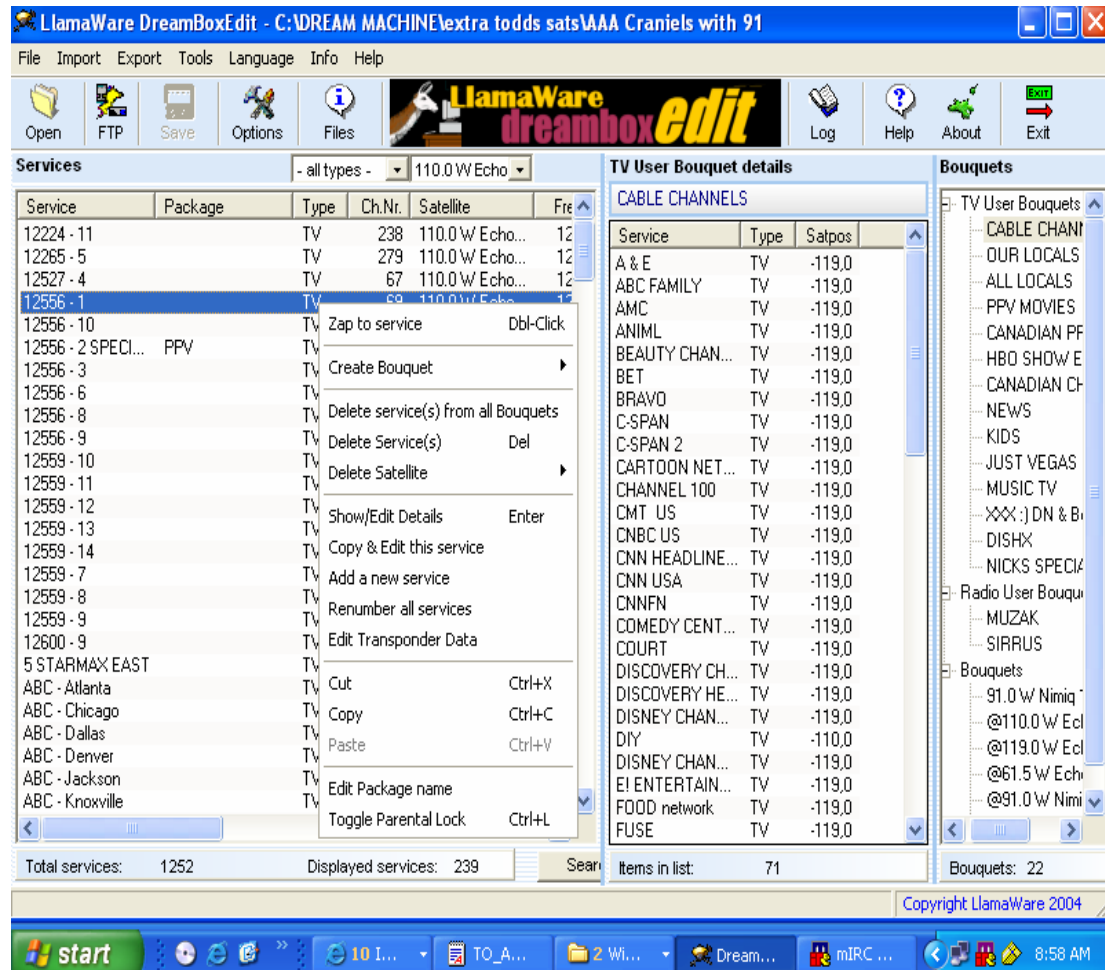
Address: http://www.lyngsat.com/110west.html

DirectTV 6 & EchoStar 6/8 © Lyngemark Satellite, last updated 2004-06-08 - http://www.lyngsat.com/110west.html

Freq. Tp	Provider Name Channel Name	Video Encryption	SR - FEC SID - VPID	NID - TID Audio	Beam	Source Updated
12224 R tp 1	 DISH Network DISH 500	AUP A	DVB Nagravision 1 Nagravision 2	20000 - 5/6 9900 6690 6691 E	Conus	J Hotsenpiller 040311
12239 L tp 2	 DISH Network	AP	DVB Nagravision 1 Nagravision 2	20000 - 5/6 4102-272	Central Florida	J Hotsenpiller 040402
12239 L tp 2	 DISH Network	AP	DVB Nagravision 1 Nagravision 2	20000 - 5/6 4102-262	Ohio	J Hotsenpiller 040401
12239 L tp 2	 DISH Network	AP	DVB Nagravision 1 Nagravision 2	20000 - 5/6 4102-252	Northern Plains	J Hotsenpiller 040323
12239 L tp 2	 DISH Network	AP	DVB Nagravision 1 Nagravision 2	20000 - 5/6 4102-282	Texas	J Hotsenpiller 040423
12239 L tp 2	 DISH Network	AP	DVB Nagravision 1 Nagravision 2	20000 - 5/6 4102-242	South California	S Noll 031203
12253 R tp 3	 DISH Network	AUP	DVB Nagravision 1 Nagravision 2	20000 - 5/6 4102-203	Conus	J Hotsenpiller 040117
12268 L tp 4	 DISH Network	AP	DVB Nagravision 1	20000 - 5/6 4102-264	Northeast	J Hotsenpiller 040528

Internet

12. Start **DreamBoxEdit**.
13. Point your mouse on any service listed on the left hand side and right click.
14. A drop down menu will come up.



15. Select **Add a new service** and you will see this screen.

Service Details

Transponder Data

Satellite Position *

Transponder ID *

Network ID *

Namespace *

Frequency * Polarisation *

Symbolrate * FEC *

Service Data

Name *

Package *

Service Type * (1: TV, 2: Radio, other: data)

Service ID *

Parental Lock *

Number *

PID's

Video ☐ Audio ☐ Teletext ☐ PCR ☐ AC3 ☐

Flags

Below options affect the way the Dreambox is handling this service

☐ K (Keep): Do not automatically update the service's parameters (No DVB)

☐ H (Hide): don't show this service in the 'All Services' list (Don't Show)

16. Start at the top and

- Enter **Satellite Position** which is **110** in our example.
- Enter **Transponder ID** - **242**.
- Enter **Network ID** - **4102**.
- Leave **Namespace** blank for now, we will deal with that number after we enter all the other data.
- Frequency** is 12239 so enter **12239000**.
- Symbolrate** is 20000 so enter **20000000**.
- Choose **Horizontal** for the **Polarization**.

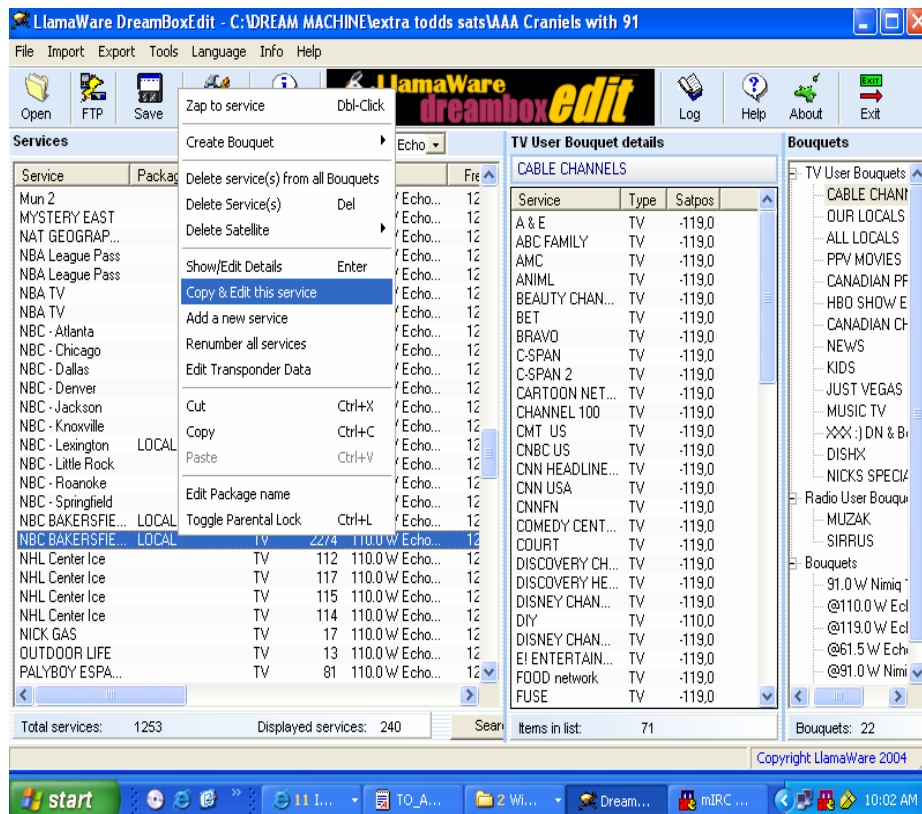
Tip: The LNBs that we use for DISH Network, Bell ExpressVu and DirecTV are circular LNBs so the polarization is **R** or **L**. **R = Vertical** and **L = Horizontal** in **DreamBoxEdit**.

- Choose **5/6** for **FEC**.
- Enter **Name** as **NBC BAKERSFIELD**.
- Package** can be named anything you want like **Locals**.

- k. Enter **1** for TV at **Service Type**.
 - l. Enter **7302** for **Service ID**.
 - m. Leave **Number** alone.
 - n. Now go back up and click **Calculate Namespace**.
 - o. Click **Add** and you are done.
 - p. The **PIDs** are for adding AC3 or Dolby Sound. There is more in the forum about Dolby sound.
11. Click **Save**.
12. Now send this new list to your DreamBox by using **DreamBoxEdit** as described in Section 7. (Click **FTP** and then **Send Files to DreamBox** and then **Reload**.)

Adding Additional Services to the Same Transponder and Satellite

1. If we want to add another service from transponder 2 with TID of 242 like FOX Bakersfield we would highlight NBC Bakersfield.
2. Right click on NBC Bakersfield and select **Copy & Edit this service**.



3. Now just enter the correct name and SID for the new service.
4. Click **Add** and you are done with this service.

Section 14

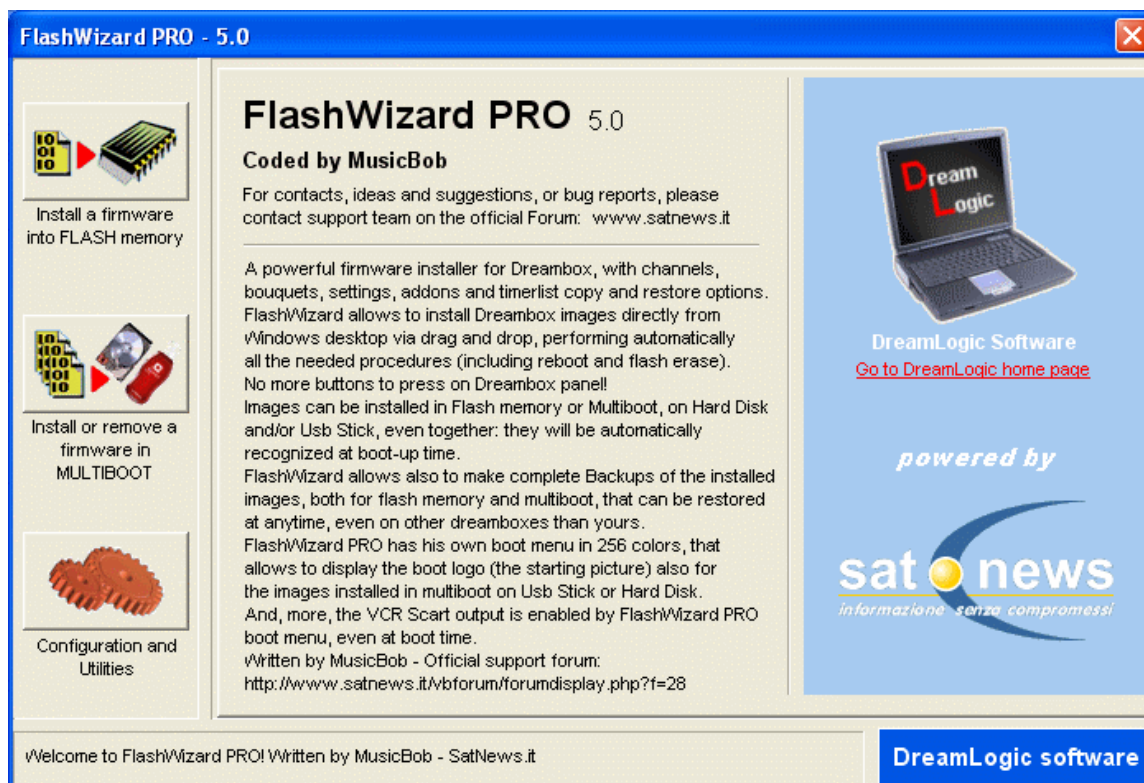
Using FlashWizard for Backups

FlashWizard is a program that allows you to:

1. Backup your entire DreamBox and restore it if you have any future problems. (If the Box has frozen you will have to use **DreamUp** first and then restore your image with **FlashWizard**.)
2. Restore your image and settings or someone else's image and settings. The file must be in **.FWZ** format.
3. Telnet to your DreamBox and edit files with **vi Editor**.
4. Easily install Multiboots to switch between images.
5. Now can configure your DreamBox for NFS drive usage.

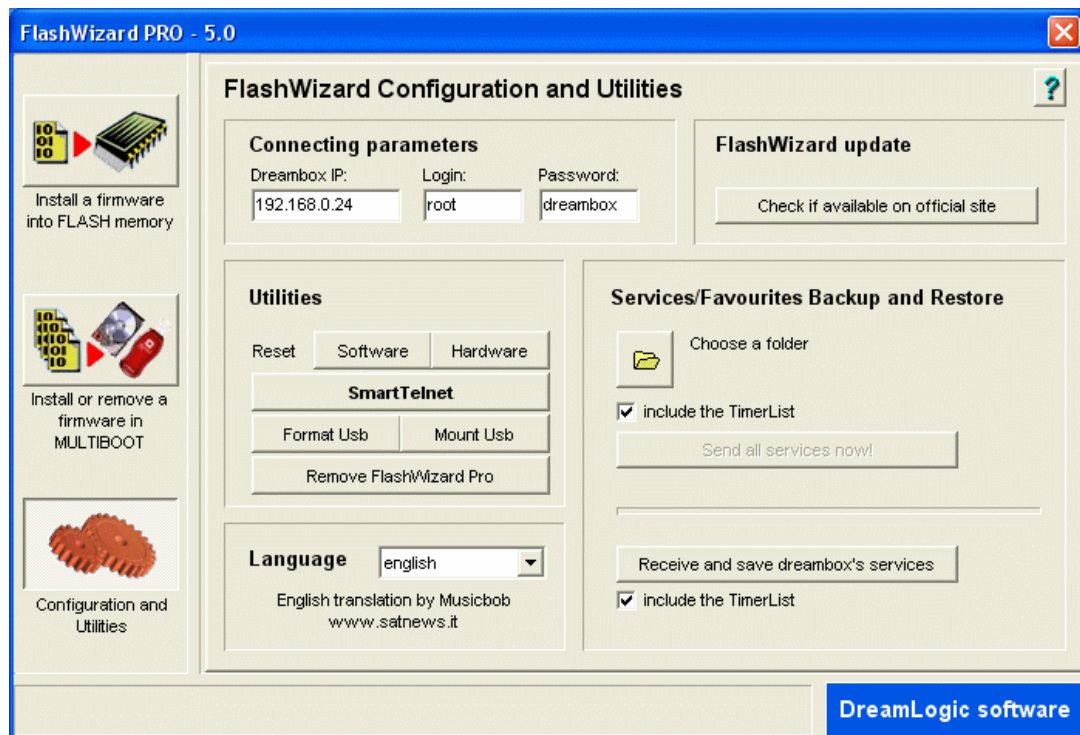
This is the simplest technique for getting your DreamBox up and working if you are unable to follow simple instructions as outlined above and if you are computer illiterate and unwilling to learn. You will have to get

someone else's backup and restore it to your DreamBox as outlined [below](#).



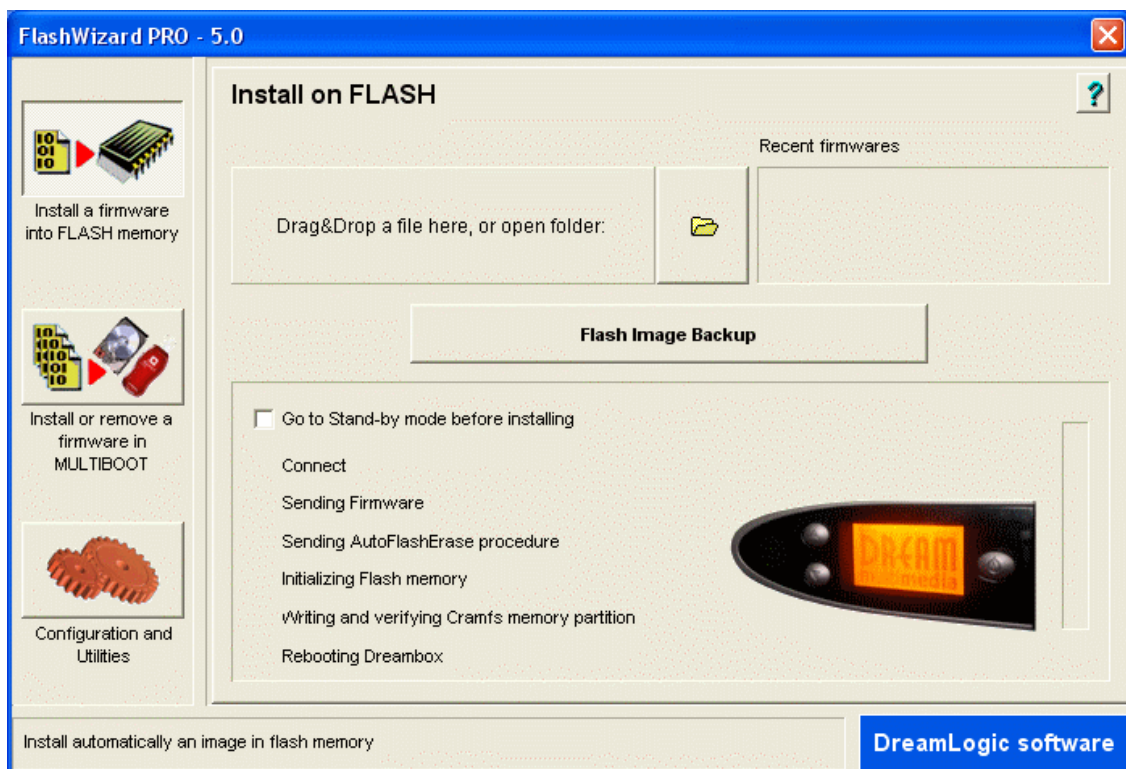
Configuring **FlashWizard**:

1. Click on **Configuration and Utilities**.
2. Enter the IP of your DreamBox and your language.



Backing up your image and settings:

1. Start **FlashWizard**.
2. Click **Install a firmware into FLASH memory**.
3. Click **Flash Image Backup**.
4. Create a name for your backup.
5. Click **Save**.



Restoring your image and settings:

1. Start **FlashWizard**.
2. Click **Install a firmware into FLASH memory**.
3. Click the **Folder** icon.
4. Click on the file you wish to restore.
5. Click **Open**.
6. When it asks, **Sure to restore the backedup image?**, click on **Yes**.

Section 15

Scanning Satellites

You will need to scan any satellite of interest that is not listing in the **DBFN Service List**. Any information about a specific satellite contained in a service list will be deleted and replaced by your scan of that same satellite.

Tip: Current images will not scan DISH at all and scan Bell ExpressVu poorly. Use the **DBFN Service List** if possible.

Procedure:

1. Press the **Menu** button to bring up the toolbar at the bottom of the screen. Look for the **Setup** icon and press **OK**. Go to **Service Searching** then to **Automatic Transponder Scan**.
2. Scroll down to **Network** and select you satellite of interest from the drop down menu.
3. Press the **Green** button or the down arrow button to the **start scan** box and begin the scan.
4. Press the **Exit** button on the remote when the scan is done and it will ask if you want to **scan another Satellite**. Press the **Green** button or the **OK** button scan another. Press the **Red** button or the right arrow button to the **No** box to end scanning.

Section 16

Primer On Skins

Skins are templates that control the look of your DreamBox's screen. A skin allows you to customize the DreamBox display

including the window, dialog, and even the appearance of the fonts on your TV.

There are simple skins without folder icons.



There are more advanced skins with folders filled with (*.png) pictures.



Some skins have the tendency to clip the bottom of the image because most of the skins available are for PAL images and settings. It's as though the display should be shifted up slightly.

Changing Skins

WARNING Make sure your new skin is NTSC compatible and also compatible with the Image you are using. Different images use a alternate methods for obtaining different elements of the DreamBox's internal command.

A simple search will find many skins for you. These two links have a large assortment of skins with which you can play.

You can upload a new skin to the var/tuxbox/config/enigma directory or you can install them as an enigma plugin if supported by the image. **Nitro** skins can be installed with the **Plugins Manager**.

A skin usually contains the following files and directories:

1. The **Skins** folder contains the two settings files for displaying information. They are skinname.esml and skinname.info. The DreamBox will use these configuration files to determine how to display the skin. They should be uploaded to var/tuxbox/config/enigma/skins.
2. The **Pictures** folder typically is in the same folder as the **Skins** folder. Usually, var/tuxbox/config/enigma/pictures.
3. The **Fonts** folder is typically uploaded to var/tuxbox/config/enigma/fonts.

Editing Skins

1. Open the skinname.esml file in a compatible UNIX editor like UltraEdit-32 and find the <fontalias> section near the top.
2. Find the following line and change size value (xx) to alter the size of the Channel Information text.

```
<map name="eChannelInfo" font="Blue.Regular" size="xx" />
```

3. You can do the same thing with the LCD display by changing the size value (xx).

```
<map name="lcd.main.service_name" font="lcd" size="xx" />
```

Don't go too big though. You can adjust your skin the way you like it by experimenting with the different codes and values in the <fontalias> section.

Don't change any other values in the esml file, unless you know what you are doing, as you can render the skin unusable and the DreamBox will fail to boot. Sometimes you will be able to FTP to the DreamBox and remove the skinname.esml file to allow it to reboot. You will have to reinstall your image with DreamUp if that doesn't work for you.

Activating Your Skin

1. Use your DreamBox remote to navigate to the Menu – Setup – System Settings – OSD Settings.
2. Select your skin. Enigma will reboot during this process.

<http://dreambox-skins.de.vu/>

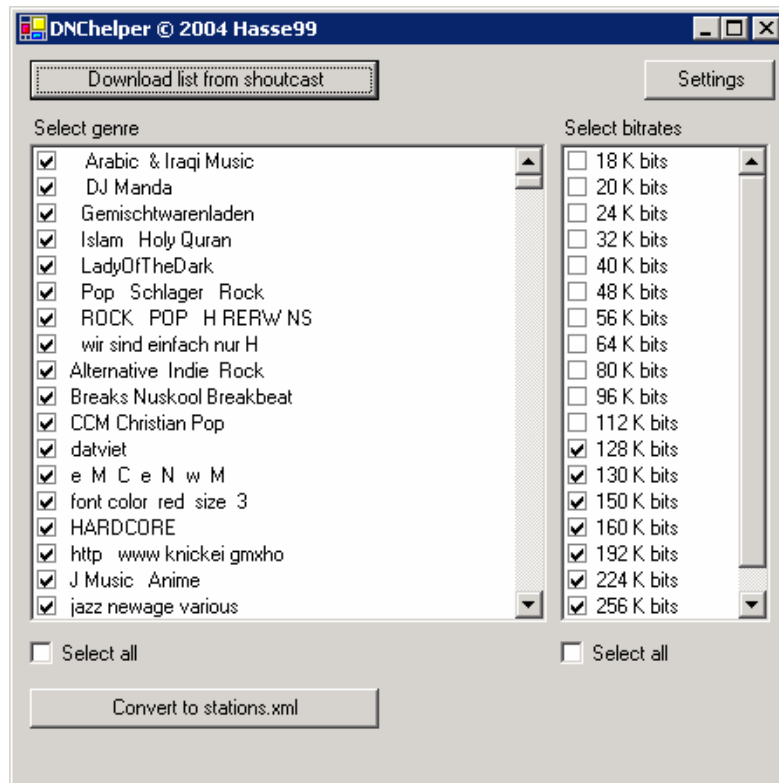
<http://www.dreamboxfornewbies.net>

There should be a **read me** file in your download to help you place the skin files on your DreamBox appropriately.

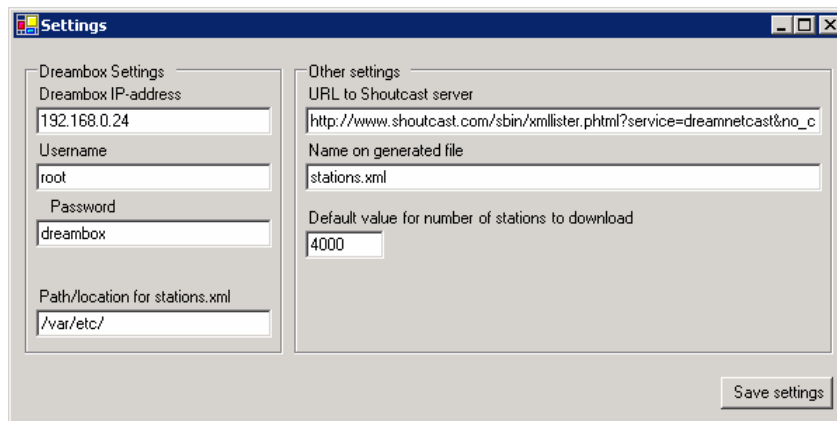
Section 17

DreamNetCast Internet Radio

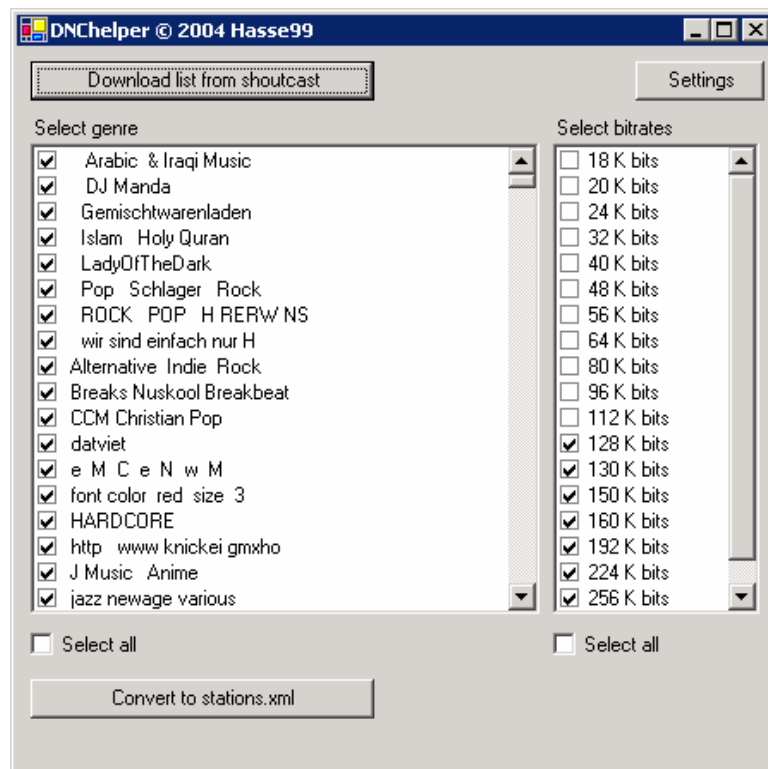
1. Download the **DreamNetCast** plugin for **Nitro** and install using the [Plugin procedure](#) above.
2. The **DNC Helper** application that needs to be installed on your PC.
3. Now launch the **DNCHelper.exe** file on your PC:



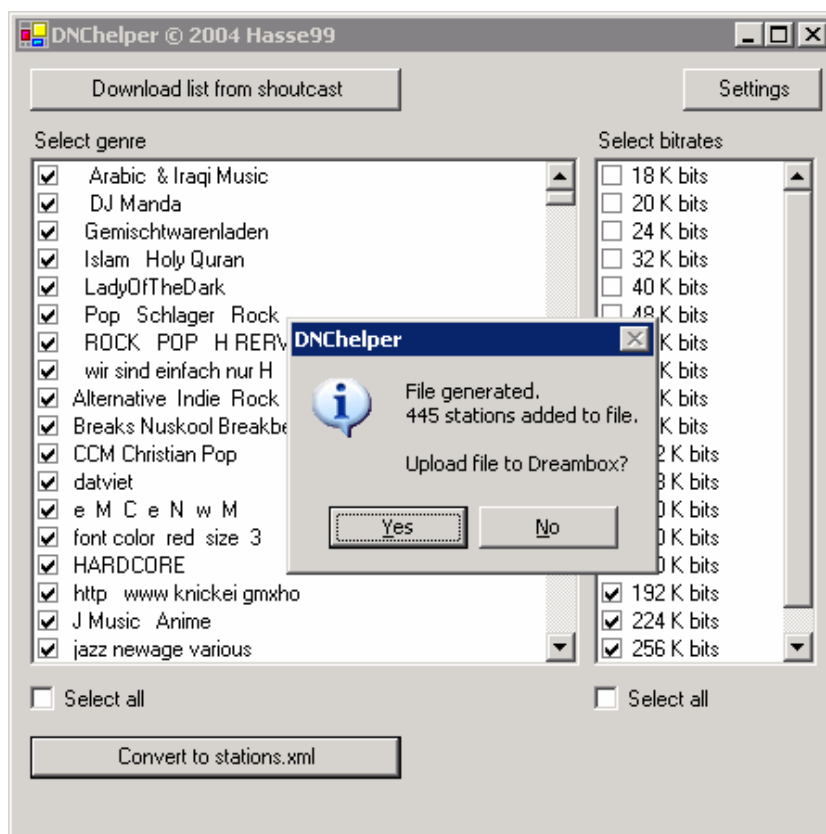
4. Verify and correct the settings to match those on your DreamBox (IP, Username, and Password).



5. Save settings and hit the **Download list from shoutcast** button.



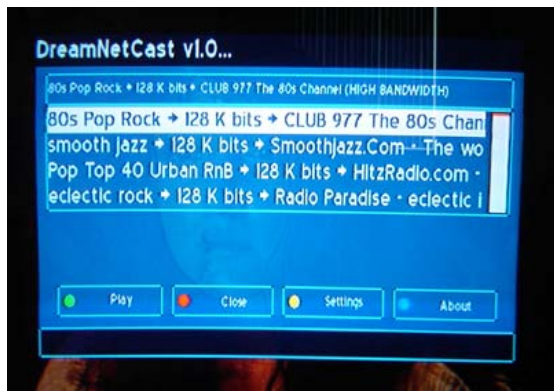
6. Select which stations you like and hit the **Convert to stations.xml** button.



- Click the Yes button when prompted if you want to upload the file to DreamBox. It will be placed in the **/var/etc** folder.

NOTE: Depending on which image you're using, there may be a **stations.xml** symbolic link located in the above folder, if that's the case, please delete it before uploading the **stations.xml** file.

- Now hit the **Blue** button on your DreamBox remote control and select the **DreamNetCast** plugin from the list.
- Select desired station and hit the **Green** button or scroll to the **Play** button and press **OK**.



- Enjoy the music.



JukeBox

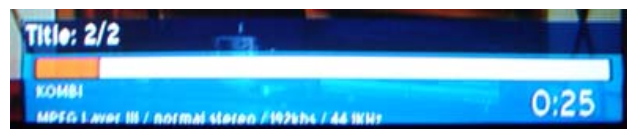
Download the **DreamNetCast** plugin for **Nitro** and install using the [Plugin procedure](#) above.

Now hit the **Blue** button on your DreamBox's remote control and select the **Jukebox** plugin from the list.

Navigate to your MP3 folder stored on either a CIFS share, or an NFS share and hit the **OK** or **Play** button. You may also use the color buttons shuffle the order of playback.



4. Enjoy the music.



Section 19

BitControl Streaming

BitControl is a fantastic program designed to stream whatever is playing on your DreamBox to your PC. This program is not freeware and I recommend that you try it then buy it. I personally want to support those who write great programs for us.

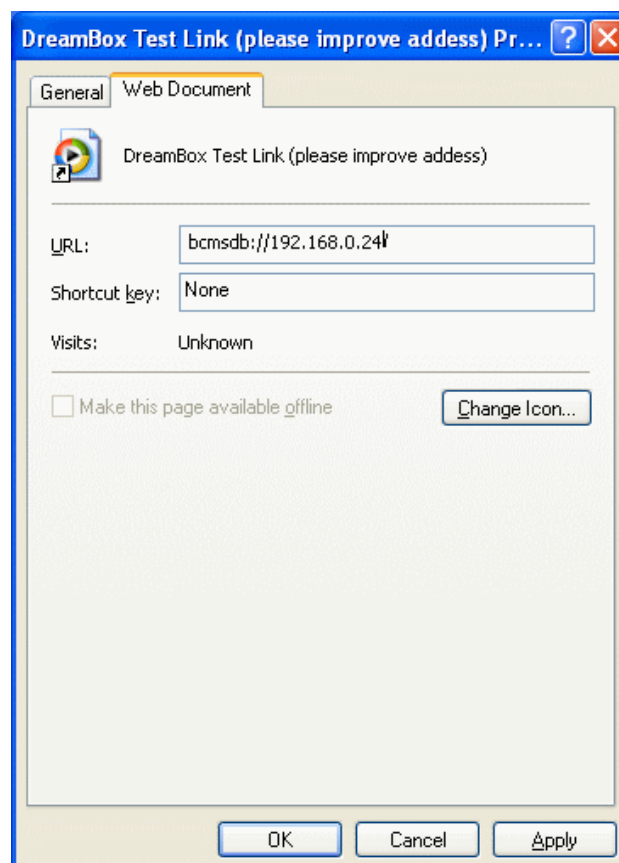
1. Download a trial version from <http://bitcontrol.com/download/download.shtml>. Select

bitcontrol® Dreambox Bundle 2.0 (d-Box II compatible) Trial Version.

1. Double click on icon that was downloaded and install. Find the new icon.



2. Right click on this icon and select **Properties** to change the IP address to yours and select **OK**.



3. Now double click on the icon and **Windows Media Player** will pop up with the streaming from your DreamBox.

Section 20

Links

Excellent links for downloads:

1. <http://www.dreamboxfornewbies.org>
2. <http://www.dreamboxfornewbies.net>
3. <http://www.digsat.net>
4. <http://www.dreamboxworld.com>
5. <http://www.olmi.cz/dreambox>

Excellent English Forum links:

1. <http://www.dreamboxfornewbies.net>
2. <http://www.digsat.net/>
3. <http://sat-industry.net/>

Official Dream Multimedia Website

<http://www.dream-multimedia-tv.de/>

Section 21

Features of the Nitro Image

Here I have listed additional features of the Nitro Image not covered elsewhere. This section tells you what the buttons are for.

Multi EPG

The **Multiview EPG** is much improved and can give up to 48 hours of EPG data without causing any freezing. The EPG data stops parsing when the memory gets low to prevent freezing.

Press the **Red** button while in TV mode and you will see this screen.

EPG Style

- Channel EPG
- Multi EPG**
- Clear EPG Cache

open EPG for next five channels

Select **Multi EPG** by highlighting it and pressing **OK**.

Pressing the **0** on the remote toggles between Half Screen EPG and the Full Screen EPG.

	12:00am	12:30am	1:00am	1:30am	2:00am	2:30am
PPV 510	Sin City (All Day, DD)				Sin City (All Day, DD)	
PPV 511	Sin City (All Day, DD)			Sin City (All Day, DD)		
PPV 512	XXX: State of... (All Day, DD, LBX)					
PPV 513	XXX: State of the	XXX: State of the Union (All Day)				
PPV 514	XXX: State of the Union (All Day)		XXX: State of the Union (All Day)			
PPV 515	Beauty Shop (All Day)			Beauty Shop (All Day)		
PPV 516	Beauty Shop (All Day, DD)					
PPV 517	Because of Winn-Dixie	Because of Winn-Dixie (All Day, DD)				
PPV 518	Because of Winn-Dixie (All Day)		Because of Winn-Dixie (All Day)			

press 1 ... 6 to select count of visible hours. 0 expands multi-epg

02.10. 10:30pm - 1:00am Sin City (All Day, DD)

	12:00am	12:30am	1:00am	1:30am	2:00am	2:30am
PPV 507	Alexander (All Day)					Alexander (All Day)
PPV 508	Frank Miller's Sin City (All Day)				Frank Miller's Sin City (All Day)	
PPV 509	Frank Miller's Sin City (All Day)					Frank Miller's Sin
press 1 ... 6 to select count of visible hours. 0 expands multi-epg						
02.10. 11:30pm - 2:30am Alexander (All Day)						

Timer Fuction

You will be able to set timers for both DVR and NGRAB from the Multi-EPG menu. You can set your DreamBox to either record to a DVR device or just to change the channel taking advantage of either NGRAB streaming or allowing your DreamBox stream to be recorded via another device such as external DRVs or PVRs like TiVos.

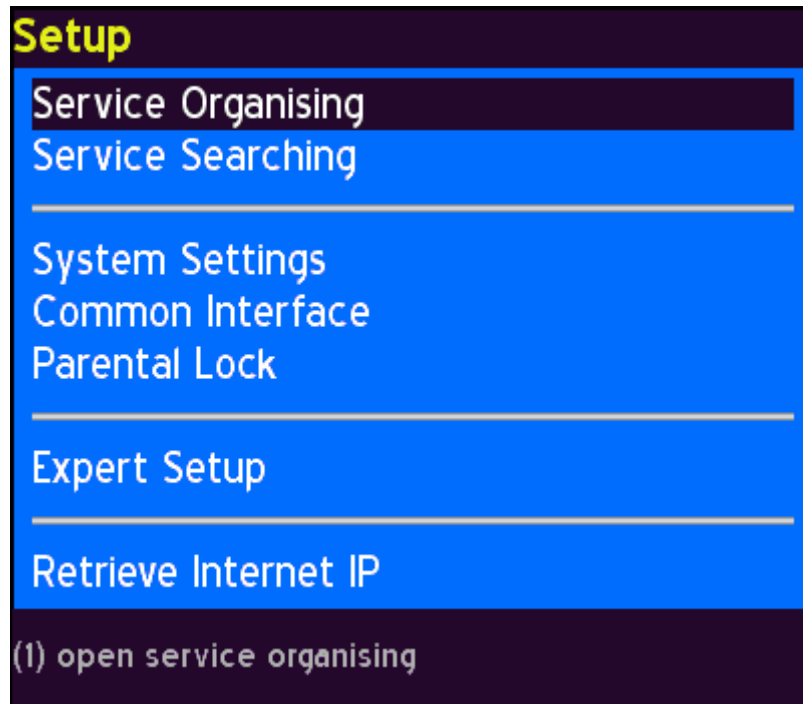
AC3 (Dolby Digital)

It is no longer necessary to use channel lists with special **DD Channels** that include the known AC3 PIDs.

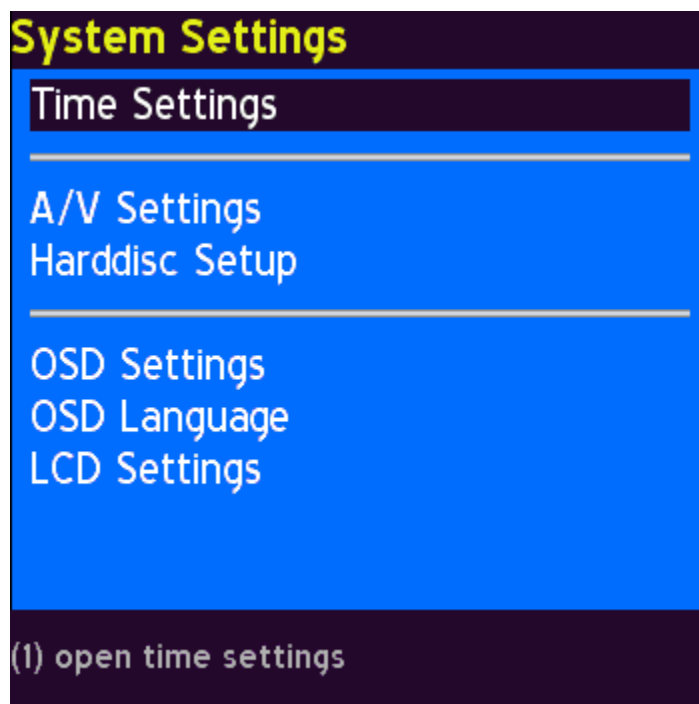
Go to **Menu**.



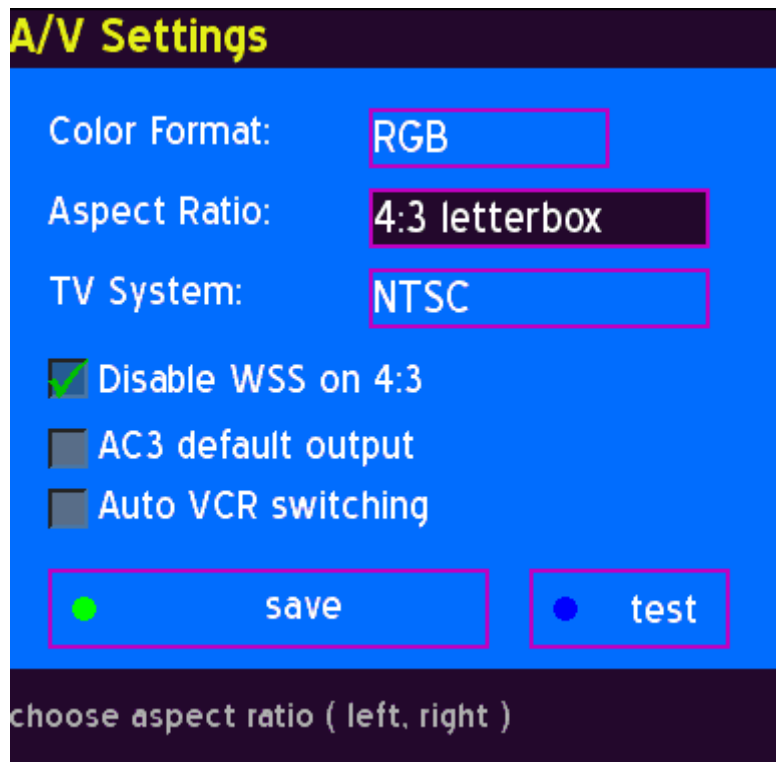
Select **Setup**.



Select **System Settings**.



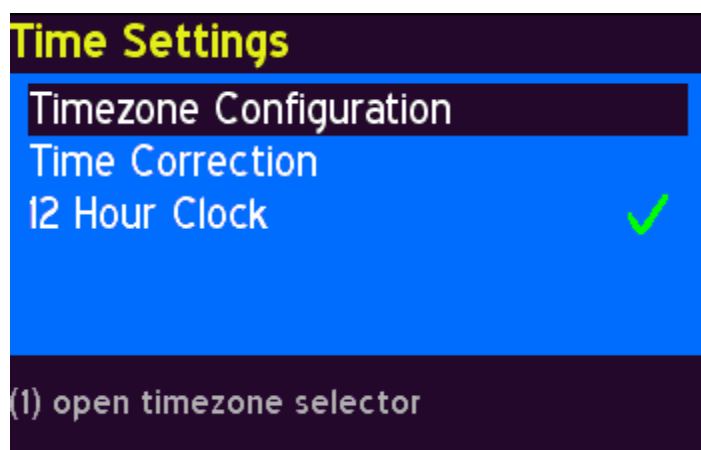
Choose **A/V Settings**.



Select **AC3 default output**. This selection will cause you to have no sound if your equipment does not have Dolby Digital capabilities.

Remote Control Functions (Under Construction)

24/12 Hour Clock



F. Enhanced WebIf (Web Interface)

Nitro's Enigma Web Interface - Dreambox - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Print Mail News RSS Feeds

Address http://192.168.0.27/?screenWidth=1024 Go Links

PPV 511
1:00pm(150) Sin City (All Day, DD)
3:30pm(150) Sin City (All Day, DD)

SNR: 92% AGC: 89% BER: 0 unlocked 3:13 h up 192.168.0.27 vpid: 0x1122 apid: 0x1123

WEB-X-TV Audio Video EPG Info Stream Info VLC

0:00 n/a n/a

ZAP TIMERS CONTROL CONFIG HELP

ZAP: TV - Bouquets

TV	MY LOCALS	(119.0W) PPV 502 - 14:00 (90) The Wedding Date (All Day
Radio	DISH PPV	(110.0W) PPV 503 - 14:30 (90) The Wedding Date (All Day
Data	BEV PPV	(110.0W) PPV 504 - 15:00 (90) The Wedding Date (All Day
Movies	DISH MOVIES	(110.0W) PPV 505 - 12:30 (180) Alexander (All Day)
Root	BEV MOVIES	(110.0W) PPV 506 - 14:00 (180) Alexander (All Day, DD, LI
	DISH CABLE	(110.0W) PPV 507 - 14:30 (180) Alexander (All Day)
	BEV CABLE	(110.0W) PPV 508 - 13:30 (150) Frank Miller's Sin City (All
	ADULT	(119.0W) PPV 509 - 14:00 (150) Frank Miller's Sin City (All
	DISH SPORTS	(110.0W) PPV 510 - 15:00 (150) Sin City (All Day, DD)
	BEV SPORTS	(119.0W) PPV 511 - 13:00 (150) Sin City (All Day, DD)
	MUSIC TV	(110.0W) PPV 512 - 14:00 (120) XXX: State of... (All Day, I
	NEWS	(110.0W) PPV 513 - 14:30 (120) XXX: State of the Union (I
	DISH LOCALS	(110.0W) PPV 514 - 15:00 (120) XXX: State of the Union (I
	BEV LOCALS	(110.0W) PPV 515 - 13:30 (120) Beauty Shop (All Day)
	KIDS	(110.0W) PPV 516 - 14:00 (120) Beauty Shop (All Day, DD)

EPG-Overview

Done Internet

Nitro's Enigma Web Interface - Dreambox - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Print Mail News RSS Feeds

Address http://192.168.0.27/?screenWidth=1024 Go Links

PPV 503
11:30p(90) The Wedding Date (All Day, DD)
1:00am(90) The Wedding Date (All Day, DD)

SNR: 92% AGC: 91% BER: 0 unlocked 0:08 h up 192.168.0.27 vpid: 0x1522 apid: 0x1523

WEB-X-TV Audio Video EPG Info Stream Info VLC

0:00 n/a n/a

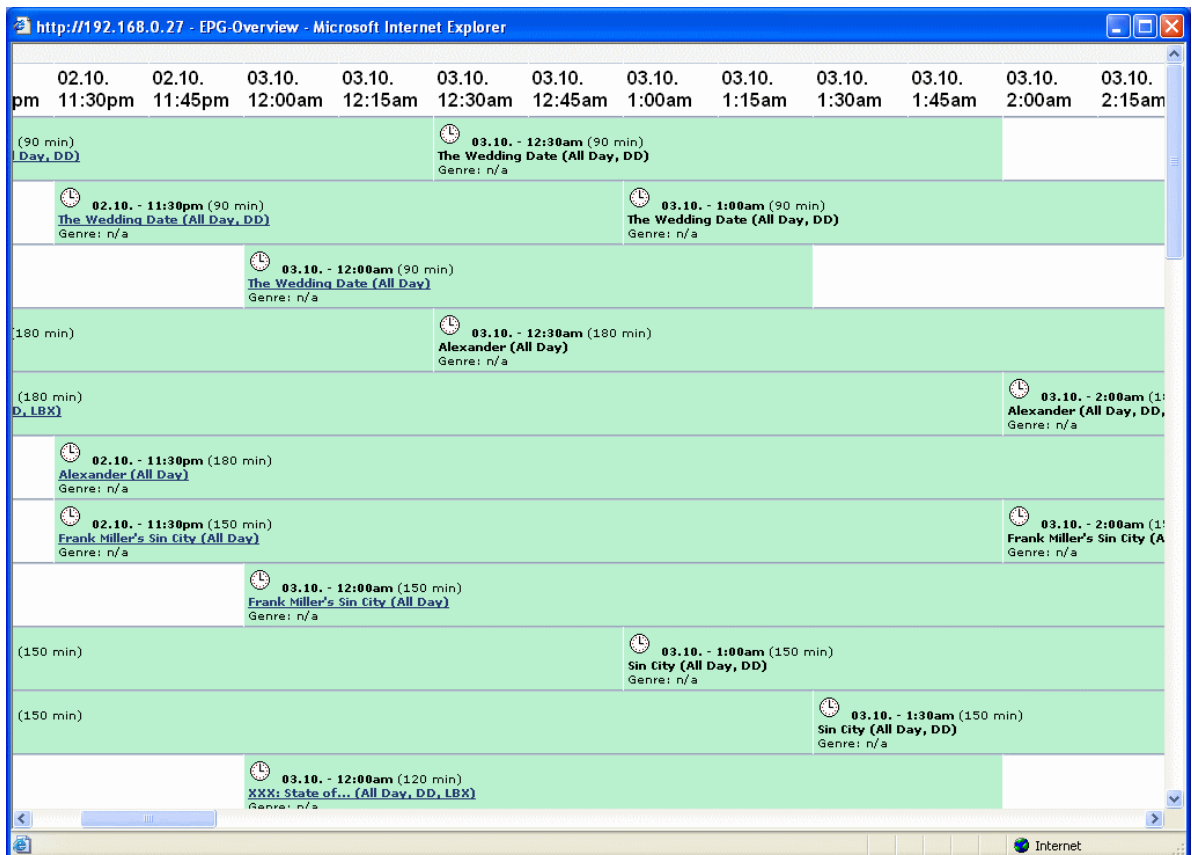
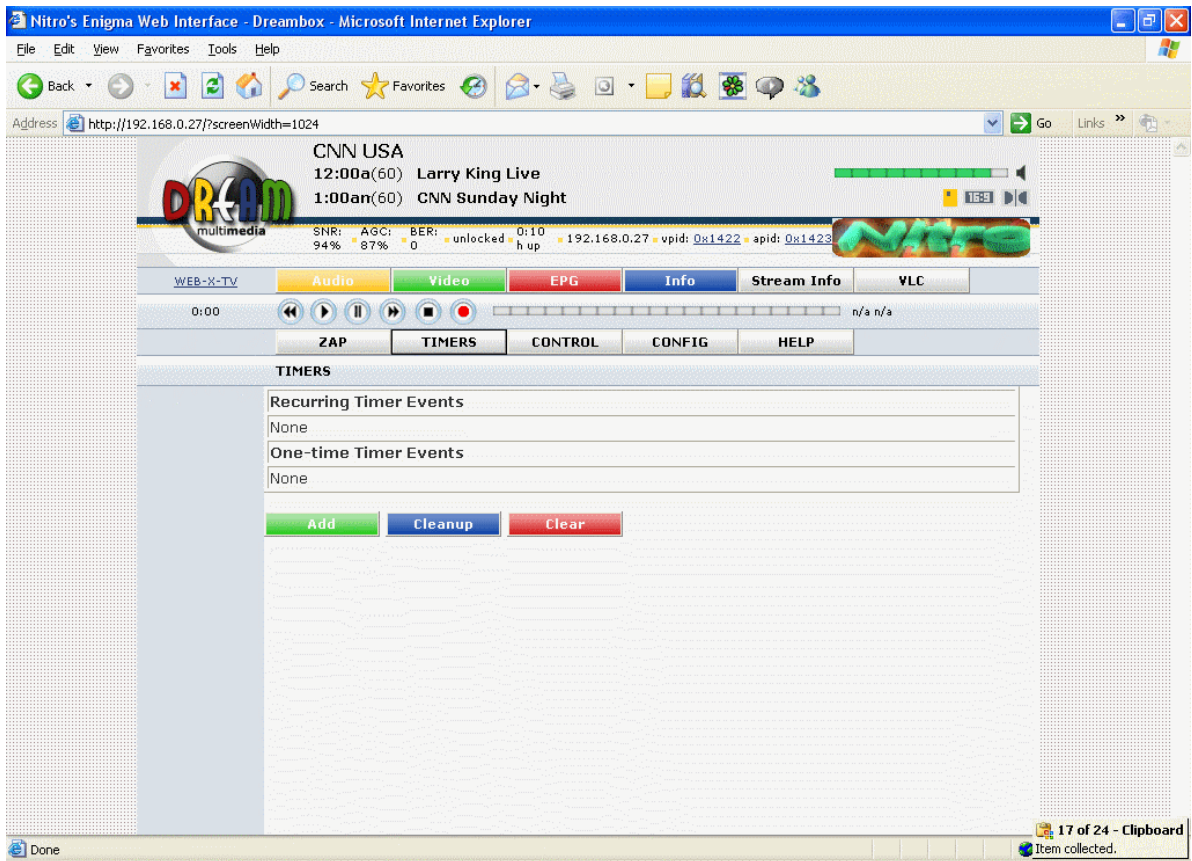
ZAP TIMERS CONTROL CONFIG HELP

ZAP: Radio - Bouquets

TV	GALAXIE	(91.0W) Galaxie Adult Alternative
Radio	MUZAK	(91.0W) Galaxie Ambient
Data	SIRIUS	(91.0W) Galaxie Bande a Part
Movies	OTHER	(91.0W) Galaxie Baroque
Root	RELIGIOUS	(91.0W) Galaxie Big Band
		(91.0W) Galaxie Blues
		(82.0W) Galaxie Celtic
		(91.0W) Galaxie Chamber Music
		(91.0W) Galaxie Classic Masters
		(91.0W) Galaxie Contemporary Christian
		(91.0W) Galaxie Country Classics
		(91.0W) Galaxie Dance
		(91.0W) Galaxie Easy Listening
		(82.0W) Galaxie Electronic
		(91.0W) Galaxie Folk Roots

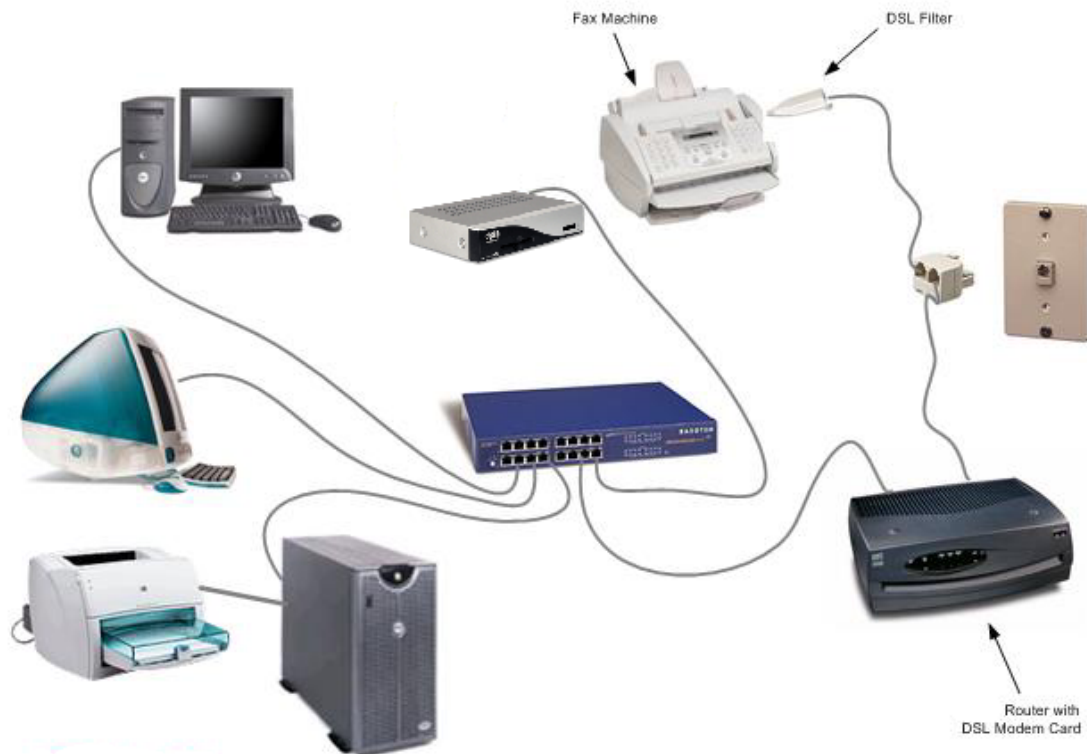
EPG-Overview

15 of 24 - Clipboard
Item collected.



Advanced Networking Information (Under Construction)

The real power of your DreamBox comes alive when you leverage a network and your personal PC. We highly recommend that you take the time and wire your DreamBox to a home network, by using a router. You can take advantage of a wireless network, however it can be a bit more difficult to setup and will not be supported within this guide.



Sample DSL LAN

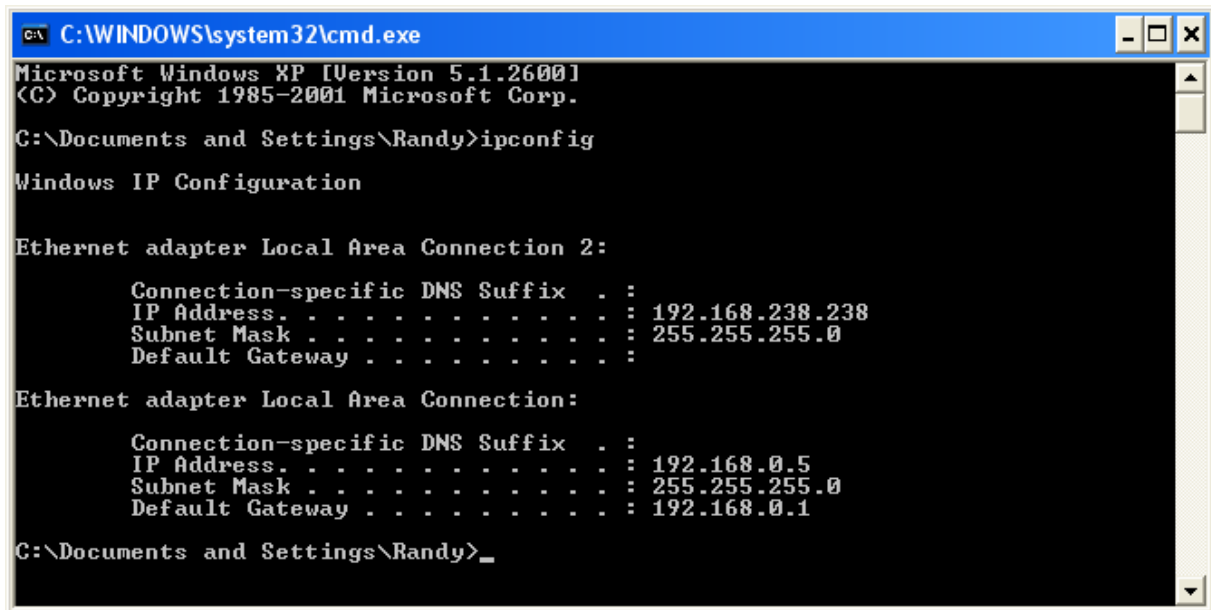
Above is an example of how a network can bring things together.

We are not recommending one router over another but the following examples will be given with a Linksys WRT54GS router in mind.

Once you have taken the time to run the cables permanently you can take advantage of some of the new features of the Nitro image. Nitro will allow you to download plugins from the internet, in the future, and take advantage of the power of your DreamBox.

You should utilize a Static Network IP address as outlined in [Section 5](#) of this document so the IP address will not be

changing. By using a Static IP address you can then log into your DreamBox from the internet and set timers or change settings remotely. You can leverage the power of the internet and have some TRUSTED friends help you with your DreamBox remotely. The first thing you need to do is set a [Static IP](#) on your DreamBox. Log into your router via the router's IP address. This was discussed in Section 5 as well. It is usually the Default Gateway.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Randy>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection 2:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . . : 192.168.238.238
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . . : 192.168.0.5
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.0.1

C:\Documents and Settings\Randy>
```

Our particular router can be accessed via a web page by going to <http://192.16.0.1>. In most cases, you will be prompted for a username and password before you can access your router information. This information would have been setup when you either installed the router or when the professional installed it. If your router is still using the default username and password that is in your router manual, we highly suggest you change it. Once you have logged into your router, you will be able to setup "Port Forwards" and "assigned ports". This means anytime a particular application is used it will enter your network on a specific port and be directed to your DreamBox. Your DreamBox supports three Protocols: FTP (port 21), Telnet (port 23), and HTTP (port 80) which is also referred to as "The Web Port". (It supports HTTPS port 443 as well but needs to be set in the DreamBox menu for that to activate.) With these three ports available and configured, an outside user would be able to work with you and control your DreamBox. That also

means if you leave the DreamBox online and unprotected that anyone can access it leaving you vulnerable to network attacks. You can solve this one of two ways. First, by logging into your DreamBox via telnet or DCC (DreamBox Control Center) telnet function use the passwd command. Alternatively you can simply make sure you shut down the network forwards once you are done allowing yourself or your friend to connect to your DreamBox.

*****NONE OF THE AUTHORS OF THIS DOCUMENT OR ANYONE AFFILIATED WITH THIS DOCUMENT WILL BE RESPONSIBLE IF YOUR SYSTEM SHOULD GET COMPROMISED, PLEASE REVIEW BEST SECURITY PRACTICES BEFORE ENABLING ANY REMOTE NETWORK CAPABILITIES*****

The following screen shows how to setup port forwarding on this LinkSys WRT54GS.

Tools Help

http://192.168.0.1/Forward.asp

LINKSYS
A Division of Cisco Systems, Inc. Firmware Version : v4.70.6

Wireless-G Broadband Router with SpeedBooster

Applications & Gaming | Setup | Wireless | Security | Access Restrictions | Applications & Gaming | Administration | Status

Port Range Forward | Port Triggering | DMZ | QoS

Port Range Forward

Port Range					
Application	Start	End	Protocol	IP Address	Enable
Telnet	23	to 23	TCP	172.16.0.2	<input checked="" type="checkbox"/>
http	80	to 80	TCP	172.16.0.2	<input checked="" type="checkbox"/>
FTP	21	to 21	TCP	172.16.0.2	<input checked="" type="checkbox"/>
		to		172.16.0.	<input type="checkbox"/>
		to		172.16.0.	<input type="checkbox"/>
		to		172.16.0.	<input type="checkbox"/>
		to		172.16.0.	<input type="checkbox"/>
		to		172.16.0.	<input type="checkbox"/>
		to		172.16.0.	<input type="checkbox"/>
		to		172.16.0.	<input type="checkbox"/>

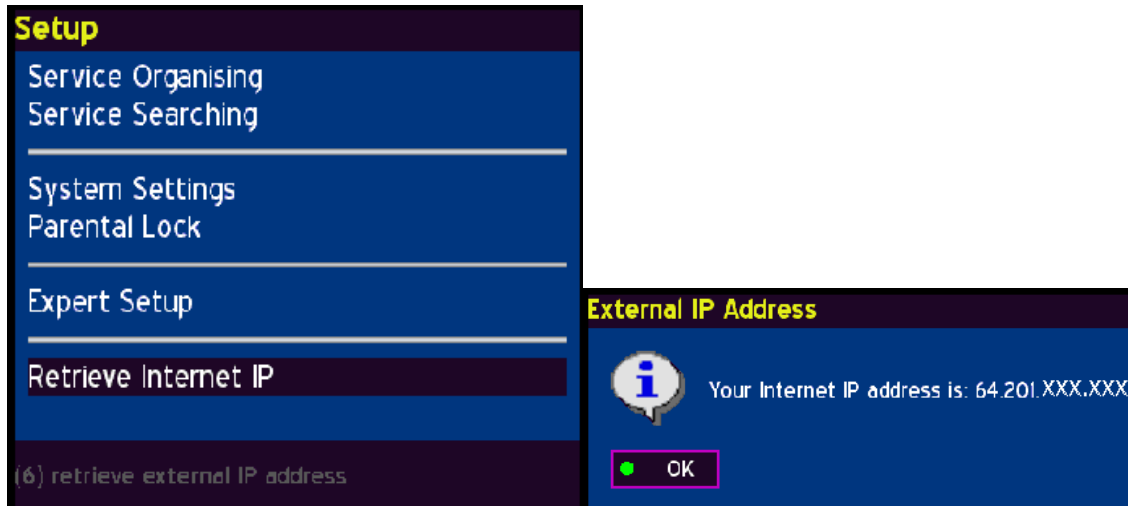
Port Range Forwarding :
Certain applications may require to open specific ports in order for it to function correctly. Examples of these applications include servers and certain online games. When a request for a certain port comes in from the Internet, the router will route the data to the computer you specify. Due to security concerns, you may want to limit port forwarding to only those ports you are using, and uncheck the **Enable** checkbox after you are finished.
More...

Save Settings Cancel Changes

CISCO SYSTEMS

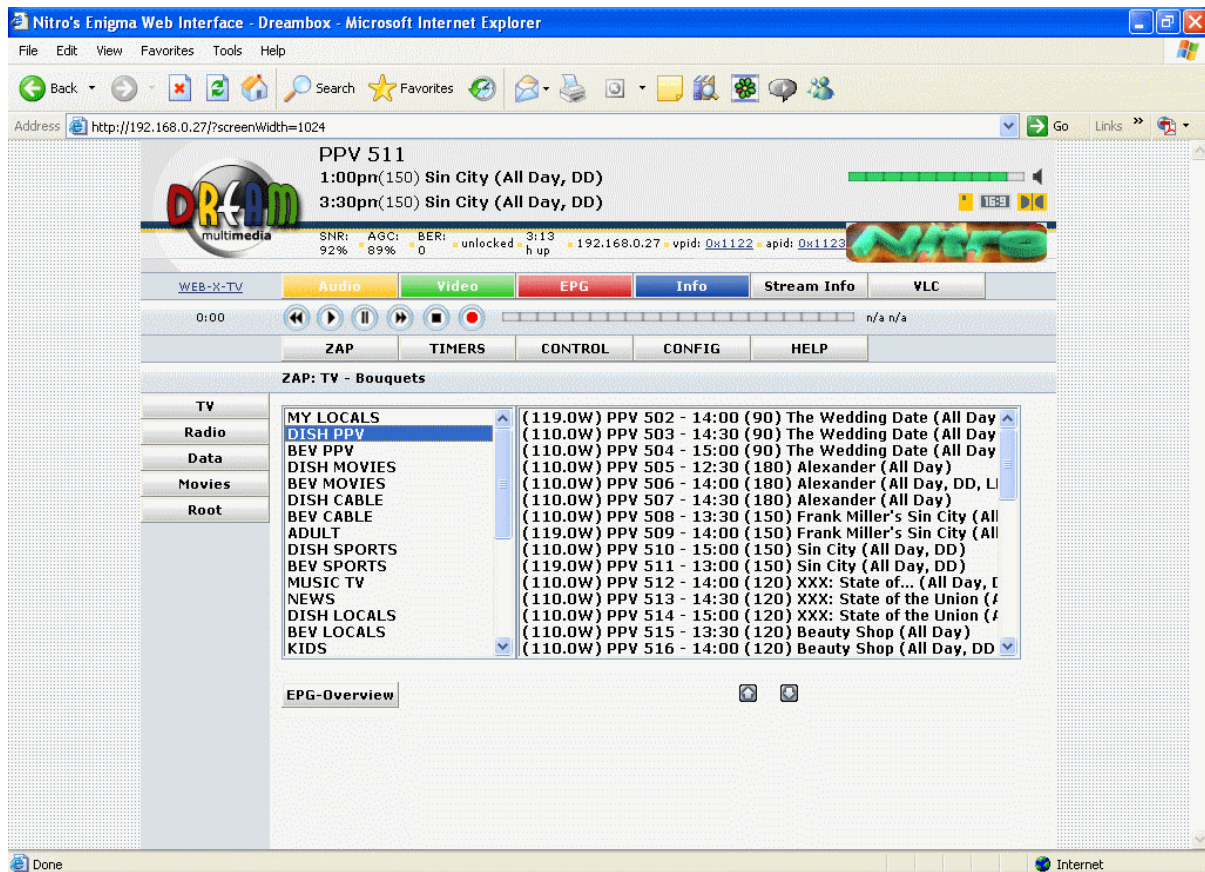
As you can see we have forwarded Telnet, FTP and HTTP with their appropriate ports to 192.168.0.2 (assuming of course that the DreamBox has been set to a static IP of 192.168.0.2. You

are now able to connect to the DreamBox from the internet using your public internet address. This address can be obtained if your DreamBox is correctly configured to connect to the internet by selecting MENU → SETUP → Retrieve IP.



The XXX.XXX are blocked out by design.

Now that you have the internet IP, you can offer it to your friend or log into your DreamBox yourself remotely.



You will be able to setup remote timers and repair certain aspects of your DreamBox. Remember, if you leave this access open and unprotected you will expose not only your DreamBox but your entire home network as well. Consider changing your password on your DreamBox.

Section 23

Glossary of Terms (Under Construction)

AC3 (Digital Dolby): Dolby Digital (AC-3) is Dolby's third generation audio coding algorithm. It is a perceptual coding algorithm developed to allow the use of lower data rates with a minimum of perceived degradation of sound quality. This coder has been designed to take maximum advantage of human auditory masking in that it divides the audio spectrum of each channel into narrow frequency bands of different sizes optimized with respect to the frequency selectivity of human hearing. This makes it possible to sharply filter coding noise so that it is forced to stay very close in frequency to the frequency components of the audio signal being coded. By reducing or eliminating coding noise wherever there are no audio signals to mask it, the sound quality of the original signal can be subjectively preserved. In this key respect, a coding system like AC-3 is essentially a form of very selective and powerful noise reduction.

Bouquet: Your new DreamBox has a feature in which you are able to group your channels within bouquets. This is basically a user configurable grouping of channels, such that all news channels from different satellites can be categorized together into groups called bouquets. The power of the bouquets allows you to build groupings as large or small as you personally wish to have them. (It is recommended that you use DreamBoxEdit to manipulate and edit your channel, and bouquet lists).

CAT5: **Category 5 cable**, commonly known as **Cat 5**, is an [unshielded twisted pair](#) type [cable](#) designed for high signal integrity. The actual standard defines specific electrical properties of the wire, but it is most commonly known as being rated for its [Ethernet](#) capability of 100 Mbit/s. Cat 5 cables are often used in [structured cabling](#) for [computer networks](#) such as [Fast Ethernet](#), although they are also used to carry many other signals such as basic [voice](#) services, [token ring](#), and [ATM](#) (at up to 155 [Mbit/s](#), over short distances).

CIFS: Common Internet File System (CIFS) is a proposed standard [protocol](#) that lets programs make requests for files and services on remote computers on the Internet. CIFS uses the [client/server](#) programming

model. A [client](#) program makes a request of a [server](#) program (usually in another computer) for access to a file or to pass a message to a program that runs in the server computer. The server takes the requested action and returns a response. CIFS is a public or [open](#) variation of the [Server Message Block Protocol](#) developed and used by Microsoft. The SMB Protocol is widely used in today's local area networks for server file access and printing. Like the SMB protocol, CIFS runs at a higher level than and uses the Internet's [TCP/IP](#) protocol. CIFS is viewed as a complement to the existing Internet application protocols such as the File Transfer Protocol ([FTP](#)) and the Hypertext Transfer Protocol ([HTTP](#)).

CIFS lets you:

- Get access to files that are local to the server and read and write to them

- Share files with other clients using special locks

- Restore connections automatically in case of network failure

- Use [Unicode](#) file names

In general, CIFS gives the client user better control of files than the File Transfer Protocol. It provides a potentially more direct interface to server programs than currently available through the Web browser and its use of the HTTP protocol.

DHCP: The *Dynamic Host Configuration Protocol* (DHCP) is an Internet protocol for automating the configuration of computers that use TCP/IP. DHCP can be used to automatically assign IP addresses, to deliver TCP/IP stack configuration parameters such as the subnet mask and default router, and to provide other configuration information such as the addresses for printer, time and news servers. In the case of this document, DHCP is usually acquired from a Router, and allows your DreamBox to get its IP information automatically.

DiSEqC: DiSEqC stands for Digital Satellite Equipment Control. DiSEqC is a communication bus between satellite receivers and peripheral equipment such as LNBs, switches, and positioners. DiSEqC communication occurs over the existing coaxial cable. Eutelsat developed DiSEqC and released it to the public as an open standard. The DiSEqC protocol allows for remote control of the DiSEqC switch from the satellite receiver. A DiSEqC switch is a device which enables you to connect multiple [LNBs](#) to a satellite receiver.

DVR/PVR: A personal video recorder (PVR) is an [interactive TV](#) recording device, in essence a sophisticated [set-top box](#) with recording capability (although it is not necessarily kept on top of the television set). Vendors and media also refer to the units by these names: *digital video recorder* (DVR); *personal TV receiver* (PTR); *personal video station* (PVS); and *hard disk recorder* (HDR). Like the familiar [VCR](#), a PVR records and plays back television programs, but, unlike the VCR, it stores the programs in [digital](#) (rather than [analog](#)) form. Like a VCR, a PVR has the

ability to pause, rewind, stop, or fast-forward a recorded program. Because the PVR can record a program and replay it almost immediately with a slight time lag, what seem to be live programs can be manipulated as though they were recorded programs (which they actually are). A PVR's capabilities include time marking, indexing, and non-linear editing. The PVR encodes an incoming video data stream as [MPEG](#)-1 or MPEG-2 and stores it on a [hard disk](#) within a device that looks much like a VCR.

EPG: An electronic program guide (EPG) is an application used with digital [set-top boxes](#) and newer television sets to list current and scheduled programs that are or will be available on each channel and a short summary or commentary for each program. EPG is the electronic equivalent of a printed television program guide.

An EPG is accessed using a remote control device. Menus are provided that allow the user to view a list of programs scheduled for the next few hours up to the next seven days.

Ethernet: Ethernet is the most widely-installed local area network (LAN) technology. Specified in a standard, IEEE 802.3 , Ethernet was originally developed by Xerox from an earlier specification called Alohanet – It is used in this document to refer to connecting devices via Ethernet Cable.

FTP: (File Transfer Protocol) A communications protocol governing the transfer of files from one computer to another over a network. A protocol that allows users to copy files between their local system and any system they can reach on the network.

LAN: (Local Area Network) A local area network (LAN) is a group of computers and associated devices that share a common communications line or wireless link and typically share the resources of a single processor or server within a small geographic area (for example, within an office building).

LNB: Low Noise Block-downconverter (so called because it converts a whole band or "block" of frequencies to a lower band). An LNB sits on the end of an arm and faces the parabolic reflector ("dish") which focuses the signals from a satellite 24,000 miles away into the "feed horn" of the LNB (see pictures below). The LNB converts the signals to a lower frequency and sends them out to the cable connector, which you connect to your satellite receiver via coaxial cable.

MEPG: (Multi Electronic Programming Guide) see EPG.

NETWORK: In information technology, a network is a series of points or [nodes](#) interconnected by communication paths. Networks can interconnect with other networks and contain subnetworks.

NFS: The Network File System (NFS) is a [client/server application](#) that lets a computer user view and optionally store and update [file](#) on a remote computer as though they were on the user's own computer. The user's system needs to have an NFS client and the other computer needs the NFS server. Both of them require that you also have [TCP/IP](#) installed since the NFS server and client use TCP/IP as the program that sends the files and updates back and forth. (However, the User Datagram Protocol, UDP, which comes with TCP/IP, is used instead of TCP with earlier versions of NFS.)

NTSC: Short for *National Television System Committee*. The NTSC is responsible for setting television and [video standards](#) in the United States (in Europe and the rest of the world, the dominant television [standards](#) are PAL and SECAM). The NTSC standard for television defines a [composite video](#) signal with a [refresh](#) rate of 60 half-[frames](#) (interlaced) per second. Each frame contains 525 lines and can contain 16 million different colors.

NULL MODEM: A null [modem](#) cable allows you to connect your PC to another nearby PC or serial device using its modem protocol. (A null modem cable is limited to 30 feet in length.) The standard [RS-232C serial](#) communications interface defines a signal protocol between a Data Terminal Equipment ([DTE](#)) - usually your PC - and a Data Communications Equipment ([DCE](#)) - or your modem. The signals are transmitted on a set of lines, each of which has a function in the "talk" that the DTE and DCE do back and forth. One line each way is for data; the other lines are for different "statements" that one end of the communication sends to the other. For example, the DTE sends the DCE (usually a modem) a "Request to Send" signal on the RTS line and the DCE replies with a "Clear to Send" signal on the CTS line. After a series of similar exchanges, the DTE sends data on the line devoted to transmitting data (which for the DCE is a line for receiving data from the DTE).

PING: Ping is a basic [Internet](#) program that lets you verify that a particular [IP address](#) exists and can accept requests. The verb *ping* means the act of using the ping utility or command. Ping is used diagnostically to ensure that a [host](#) computer you are trying to reach is actually operating. If, for example, a user can't ping a host, then the user will be unable to use the File Transfer Protocol ([FTP](#)) to send files to that host. Ping can also be used with a host that is operating to see how long it takes to get a response back. Using ping, you can learn the number form of the IP address from the symbolic domain name (see "Tip").

Loosely, ping means "to get the attention of" or "to check for the presence of" another party online. Ping operates by sending a packet to a designated address and waiting for a response. The computer acronym

(for Packet Internet or Inter-Network Groper) was contrived to match the submariners' term for the sound of a returned sonar pulse.

SCART: The Scart (Syndicat des Constructeurs d'Appareils Radiorécepteurs et Téléviseurs) connector is used for combined audio and video connections. The connector is also known as Pertitel connector or Euroconnector. A formal description is given in the CENELEC EN 50 049-1:1989 standard or in the IEC 933-1 standard. Different pin-configurations exist. Which configurations are available depends on the video device used. Sometimes one can choose the configuration (like composite or S-video) by changing a software setting. Two status signals define (partly) which video signals are active. A video device can use these status signals to automatically switch between internal or external audio/video signals.

TCP: Abbreviation of *Transmission Control Protocol*, and pronounced as separate letters. [TCP](#) is one of the main [protocols](#) in [TCP/IP networks](#). Whereas the [IP](#) protocol deals only with [packets](#), TCP enables two [hosts](#) to establish a connection and [exchange](#) streams of data. TCP guarantees delivery of data and also guarantees that packets will be delivered in the same order in which they were sent.

WIFI: Short for wireless fidelity and is meant to be used generically when referring of any type of 802.11 network, whether 802.11b, 802.11a, dual-band, etc. The term is promulgated by the Wi-Fi Alliance. Formerly, the term "Wi-Fi" was used only in place of the 2.4GHz 802.11b standard, in the same way that "Ethernet" is used in place of IEEE 802.3. The Alliance expanded the generic use of the term in an attempt to stop confusion about wireless LAN interoperability.